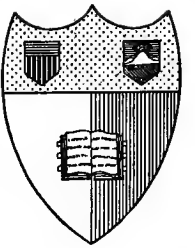


FATTY ILLS

AND THEIR MASQUERADES

BY

EPHRAIM CUTTER, LL.D.,
M.D. Harvard, 1856, and University of Pennsylvania, 1857

AND

JOHN ASHBURTON CUTTER, B.Sc.,
M.D. Albany Medical College, 1886
Corroborator

Being a contribution to clinical medicine for practitioners and students, to emphasize the inestimable value of the microscope in detecting the pre-stages of amaurosis, angina pectoris, apoplexy, Bright's disease, cataract, dementia, fatty heart, gall stones, glaucoma, hæmatophilia, locomotor ataxia, etc., and the like value of American means of treatment in these pre-stages and in those advanced states usually considered incurable

---

EQUITABLE BUILDING
120 BROADWAY, NEW YORK
THE AUTHORS
1898

This matter herewith published was delivered in part by lectures to the College of Physicians and Surgeons of Boston by the prime writer during 1894-95.

Press of Stettiner Bros.,
22-26 Reade Street,
New York

TABLE OF CONTENTS.

DEDICATED

TO

DR. G. N. TIENHOVEN,
Physician to the Queen of Holland, etc.

DR. FREDERICK SEMELEDER,
Surgeon-in-Chief to Maximilian, in Mexico, etc.

DR AUGUST MARTIN,
Chairman of the Section on Gynecology, Tenth International Medical Congress, etc.

SIR JOHN BANKS, K.C.B.,
Dublin.

SURGEON-MAJOR J. H. JOHNSTON, B.A.,
Aldershot.

LEWIS A. SAYRE, M.D.,
President American Medical Association, 1880; Emeritus Professor of Orthopædic Surgery, Bellevue Hospital Medical College, etc.

T. GAILLARD THOMAS, M.D., LL.D.,
Emeritus Professor of Gynecology, College of Physicians and Surgeons, New York, etc.

ALBERT VANDER VEER, M.D., PH.D.,
Professor of Surgery, Albany Medical College; Regent of the University of the State of New York, etc.

JOHN B. HAMILTON, M.D., LL.D.,
Supervising Surgeon-General, Marine Hospital Service of the United States, 1879 to 1891; Professor Principles of Surgery and Clinical Surgery, Rush Medical College; editor "Journal of the American Medical Association," etc.

ROBERT NEWMAN, M.D.,
President American Electro-Therapeutic Society, etc.

DEDICATION.

HENRY A. ROBBINS, A.M., M.D.,
Washington, D. C.

PROF. S. WEIR MITCHELL, M.D., LL.D.,
Clinician, author, etc., of Philadelphia.

PROF. J. SOLIS COHEN, M.D.,
Philadelphia.

JOHN V. SHOEMAKER, M.D., LL.D.,
Professor of Materia Medica, Pharmacology, and Therapeutics, Medico-Chirurgical College; editor of the "Medical Bulletin," etc.

HENRY O. MARCY, M.D., LL.D.,
President American Medical Association, etc.

SAMUEL W. ABBOTT, A.M., M.D.,
Secretary Massachusetts Board of Health, etc.

AUGUSTUS P. CLARKE, M.D.,
Dean of the College of Physicians and Surgeons, Boston; Honorary President Section on Gynecology, Twelfth International Congress, 1897, etc.

G. ARCHIE STOCKWELL, M.D.,
Editor of the "Medical Age," etc.

I. N. LOVE, M.D.,
President Mississippi Valley Medical Association; editor of the "Medical Mirror," etc.

LANDON B. EDWARDS, M.D.,
Professor of Practice of Medicine, University College of Medicine; editor "Virginia Medical Semi-Monthly," etc.

LEVI C. LANE, M.D., LL.D.,
Founder Cooper Medical College, San Francisco.

GUSTAVUS L SIMMONS, M.D.,
President California State Medical Society.

DEERING J. ROBERTS, M.D.
Editor "Southern Practitioner," Tennessee.

PROF. DUDLEY S. REYNOLDS, M.A., M.D.,
Louisville.

SAMUEL K. CRAWFORD, M.D.,
Chicago, Ill.

PRELUDE.

THE prevalence and fatality of diseases whose essence is fatty degeneration make them a subject of importance, especially as it is now, though not generally, known that they are curable. To have this fully understood means a rewriting of the science and art of medicine, as chemistry and electricity are being rewritten within the last twenty or more years. But this is no hardship, since the business of the medical profession is to cure diseases as well as to write them up. If there is any light to throw on fatty degenerations, there is need of such writing, regardless of the personal equations of the illuminator and the illuminated. So if this dark subject is made brighter and clearer, or if a cue is given to make it clearer and brighter, the end will be gained, which is to show :

I. *What fatty degenerations are normal.*

II. *What fatty degenerations are abnormal.*

III. *The fatty degenerations that are masquerades—i.e.,* diseases which really are fatty ills, but which are called by other names giving no idea of their true character and are therefore misleading.

IV. *That fatty degeneration is supposed to be a preservative process.*

V. *The diagnosis of fatty degeneration :*

(*a*) By the morphology of the blood.

(*b*) By the morphology of muscular tissue.

(*c*) By the morphology and chemistry of the urine.

(*a*) By auscultation, percussion, mensuration, palpation.

VI. *The treatment*—by food, by medicines, by forms of motion such as music, vital dynamis, massage, and by proper management, illustrating the highest art of the physician.

VII. *Special and particular treatment, with illustrative cases.*

VIII. *Partial bibliography.*

EPHRAIM CUTTER.

NOTE.—The corroborator has had little to do with the actual writing of this clinical contribution to medicine beyond the case histories in his own practice and some suggestions and emendations to the manuscript. He witnesses to the value and truth of what is herein laid down.

JOHN ASHBURTON CUTTER.

DEFINITIONS.

WHAT IS MEANT BY FATTY DEGENERATION?

"It is the replacing or substitution of nor-
" mal tissues or parts of normal tissues by
" some form of liquid, solid, crystalline, cel-
" lular, intercellular, or interstitial fat," or
" the abnormal deposition of fatty matters in
" the histological elements of animal bodies"
(Micrographic Dictionary, London, 1883).

To use language, as we do when we say "the sun rises," to set forth a perfectly intelligible fact though not scientifically expressed, we mean that fatty degeneration includes the oily, the lardaceous, the waxy, the hyaline, the tallowy, and the amyloid and sclerotic degenerations sometimes accompanied by beautiful pigments and calcareous deposits. As a general thing, fatty degenerations are recognized after death with ease; but it is the duty of physicians to recognize fatty ills before death by the use of a means of knowledge which the Nederlands conferred on the world three hundred years ago—*i.e.*, *by the microscope.*

TWO GREAT PRIME CAUSES.

First. The English idea is that fatty ills are "due to retarded or impeded functions or circulation"; or that "when the normal functions of the morphological elements of a tissue become languid or interrupted, free globules of fat or oil become deposited in them; and, as this fatty deposit is increased, the tissue loses, to a greater or lesser extent,

its natural vital and physical properties, and hence is said to be in a state of fatty degeneration" (Micrographic Dictionary).

This is seen in the destruction of horses by high feeding without proper exercise. Veterinarians say that the muscles turn into fat.

When ligatures about human limbs do not wholly obstruct the circulation, the effect is to produce fatty degeneration, especially of the muscles. Henry O. Marcy, M.D., LL.D., reports a case where he performed cholecystotomy for stones impacted in the gall bladder, and found even the fibrous tissues of the gall bladder fattily degenerated and rotten, partly due to the enormous pressure exerted by the stones.

This causal principle of pressure holds true of the vegetable kingdom as well as of the animal. Some years ago I studied the morphology of New England autumnal foliage. In the maple leaf, for example, it was found that the stem ducts were half-obliterated by a hyaline, glassy substance evenly deposited inside the walls of the ducts; that the interlaminal parenchyma of the leaf was well filled with granular and globar fat, and that the chlorophyll was undergoing other molecular changes which seemed to be due to cutting down of the sap supply by the aforesaid diminution in the normal calibre or lumen of the stem ducts.

Again, in studying the morphology of rotten apples, I took an apple with a smooth facet made by the barrel-head, which facet looked discolored and rotten. Cutting into it, the substance felt hard and inelastic in place of soft and punky. This unexpected feel caused a careful microscopic examination, which showed an abundance of starch-like (amyloid) bodies, along with fat globules and gran-

ules. I *thought to find* broken-down cells of apple protoplasm gracefully entwined with exquisitely fine mycelia of the fully developed fungus of rotten-apple fermentation vegetation. It seemed to me that the long-continued pressure of the barrel-head on the apple had retarded the inter- and intracellular circulation of the apple fluids; and hence, according to this doctrine, resulted the fatty degeneration. At least, this *rationale* is satisfactory till a better appears. Apple amyloid has been found in the bark by others, but not before in the apple substance, according to my knowledge. The fat formed in corn, peach stones, nuts, and in suet meats is normal fat.

Second Great Cause—Fatty Ills Come from Food.

(a) *Fatty food in excess*, as seen in the production of the fatty liver of Strassburg geese kept in close confinement, as a gourmand's delicacy; and as shown by experiments in feeding animals on fat foods, reported in text books of physiology.

(b) *Food in excess containing carbon, hydrogen, and oxygen*, as seen in fruits, sugars cakes, candies, pies, and other such productions of the vegetable and animal kingdoms which have few mineral elements and are mostly made up of carbohydrates, as fats are. (See list of sugars, Appendix B.) That is to say, we must expect fatty ills to occur when the food is of the same ultimate chemical elements as fat, but differently arranged in molecular combination. For example, an exclusive diet of starch, if it could be lived on long enough, should be expected to produce the substitution of normal tissues by fat.

Dr. W. A. Hammond once tried to live on starch alone, but the results were so disastrous that his friends obliged him to desist. Dogs fed on white flour alone died in forty days. Dogs lived on water alone for forty days.

The late Joseph Jones, M.D., LL.D., by experiments in changing the food of carnivorous chelonians to vegetable food—*i.e.* pursley—showed fatty degeneration as one result (Smithsonian Contributions to Knowledge, 1856).

To repeat: As fats are carbon, hydrogen, and oxygen, and as starches and sugars, wherever found, are carbon, hydrogen, and oxygen, it is natural, from a chemical point of view, to expect fatty degeneration to result from feeding on starch and sugar foods exclusively. The phyto-chemistry of our bodies is something wonderful; but it would be more wonderful if from carbon, hydrogen, and oxygen it could evolve lime, phosphorus, sulphur, fluorine, and the other ultimate chemical elements which are part and parcel of our bodies.*

(c) *But there is an American idea* as to the cause of fatty degeneration, which is all-operative, cogent, impressive, positive, and often must be present, to wit: that the fermentation of food in the alimentary canal produces gases which directly and indirectly paralyze, impede, and hinder functions, so that the gases act very much as if the circulations connected with said functions were obstructed mechanically by a string or ligature. This division might come under our first head, and also might come under the second head, as carbohydrates constitute the most fermentable

* Some chemists claim forty elements in the human body.

foods. Its unrecognized importance entitles it to a distinct recognition and separate statement; besides this, it will be better remembered by all concerned. The said fermentation is probably the most efficient cause of fatty degeneration that clinicians can get at and handle, and which indeed they handle now, as it were, in the dark. If a more direct statement is asked for, it cannot be said why, the circulation being impeded by either one or all of the causes named, the muscle cell parts with its contractile and tensile characters and takes on fatty, fragile, untensile and untextile characters, any more than we can tell why phosphorus in poisonous doses causes the same fatty degeneration of the cardiac muscles and death in the extremely short space of twenty minutes time, nor why the epithelia of the mammary glands secrete milk and the hepatic epithelia secrete bile, though both are normal fat producers. Here man stands on the confines of his limits and meets the incomprehensible boundaries of Nature, or rather of God, the Creator of Nature. Man can only say that these facts are as they are. To take a simple illustration: Who can tell why gold is yellow and silver white? You say that their nature is to produce vibrations of light which also produce on us the said visual impressions. Any better answer than the child's "God makes them so"?

I have been using the microscope since 1850, and Tolles' famous one-fiftieth and one-seventy-fifth inch objectives since 1876. I have not yet learned the solution of these mysteries, though others may; but so long as treatment on the lines laid down in this clinical contribution has enabled Nature to remove fattily degenerated tissues, and

in their place has reproduced normal tissues, there is a much better basis to work on than those now operated for the relief of this class of cases. Nature cures fatty ills when causes are removed and she is furnished with plenty of dynamis* to work with.

---

* *Dynamis* here means virtue or force, inherent, actual and potential, or vital energy, sometimes called "animal magnetism" for want of a better name. In the New Testament *dynamis* means virtue or inherent power to produce effects; ability, authority, efficacy, efficiency, energy, might, miracle, right, strength. "Metonomically, the Almighty, who possesses power and authority." (Greek Testament lexicon.)

I.

FATTY DEGENERATIONS THAT ARE NORMAL.

This chapter may seem out of place, as it clashes with the definition; still, normal uterine subinvolution and the clinical morphology of puerperal discharges beautifully demonstrate fatty epithelia, oil globules, and muscular fibres of uterus, large, long, flat, pointed at both ends, and undergoing fatty degeneration, whereby the organ is reduced to normal in a few weeks if health is good.

There is normal ovarian subinvolution in the Graffian follicles or corpora lutea of the ovaries after ovulation.

Epithelial cells of the kidneys, according to one author; epithelia of the breasts producing fat of milk; epithelia of the sebaceous glands; corpora amylacea, or amyloid bodies found in the brain, called "brain sand," and considered as normal by some writers, come under this chapter.

If the diseases due to old age are normal, then, as most of them are fatty ills, they are diseases due to normal conditions. At least, it is maintained that death from old age is a natural death, or that the way in which death comes by molecular changes when the normal limit of life is reached is natural. "The thing that is seen is temporal" applies to the animal and vegetable kingdoms. Organic life has periods of termination to its existence, while spirit is "eternal."

Adipocere, though not a clinical change, may be mentioned here. Corpses have been known to turn, after burial generally

for years, into a hard, fat, waxy substance, and portions of human muscle have undergone the same change when kept under water. Adipocere is regarded as a chemical change which certainly prolongs the existence of the parts thus changed, and, though a degeneration, it is a preservative one after death.

Obesity is an accumulation of fat where it naturally belongs in the human body, but does not necessarily include the substitution of other tissues by fat, though the two conditions are sometimes found together. Excessive obesity may become a fatty ill, and then is amenable to the same treatment as the latter. The obese, save from the inconvenience of excessive bulk, are to be regarded as in a normal condition until there is an invasion of tissues and organs and these are more or less replaced by fat. When obesity and fatty degeneration are found together, skill in diagnosis is well displayed in determining the existence of the latter. The two conditions are popularly connected together, and generally obesity is thought to precede and induce fatty degeneration; but the fallacy of this is shown by lean people presenting the most typical cases of fatty degeneration of tissues and organs.

The offices of fat in the healthy body are too well known to need repeating here. They are needful to perfect living; but when omental fat accumulates in masses as large as a man's hand, it is "obesity" and as much a condition of disease as it would be to have one's arm four feet long. Obesity is amenable to diet more than any other means, and does not have the proper attention from the profession; hence the demand for advertised nostrums.

II.

FATTY ILLS WHICH ARE ABNORMAL AND RECOGNIZED AS FATTY DEGENERATION.

Premature old age.
Fatty Heart.
Fatty Liver.
Fatty Kidneys.
Fatty Muscles, especially of limbs.

"Not only do muscular tissues, but also "capillary, venous, and arterial vessels, "connective fibrous tissues, epithelia, in- "tercellular and areolar fat tissues, glandu- "lar structures, and even tuberculous "lungs, fattily degenerate." *

A common example is the subcutaneous solid fat becoming oils, and in the writer's estimate this is an important primal link in the chain of evidence necessary to establish the diagnosis of fatty ills, of which more later. Fatty thyroid glands occur in acute diseases.

"Cancer cells and cells of inflammatory "exudation, when their functions have at- "tained their full development and cease, "fattily decay. The flesh and other pro- "tein components of one animal, when "kept in the peritoneal cavity of another "animal, will undergo fatty degenera- "tion."*

---

* Micrographic Dictionary.

The fatty degeneration, acute, which occurs in phosphorus poisoning, and lately noted in a case of death from eating a bad oyster, raw, where death ensued in a few hours.*

Probably also in water-gas poisoning.

---

*Editorial *New York Medical Journal*, 1896.

III.

MASQUERADES OF FATTY ILLS.

The effort is to show that clinicians should consider systemic conditions more than theoretical names if they wish success to crown their labors. While one must respect old names as vehicles of thought and information, he must be guided so as to remove abnormal conditions which were unknown when our nomenclature of disease was made up. At the same time, the medical men of the past must not be dishonored, since if they "did not know everything, they knew something, and knew enough to name causes of heart failure," and who made the best use of what they had. Some time medicine will be rewritten on these lines, for the reason that it is foolish to fritter away opportunities of doing good by the use of defective "nouns" that masquerade the results of fatty degeneration.

It is not well to treat disease by names. We should treat their essence, unmask all physiological sins of their disguises, call "a spade, a spade," go for the lesion causes, remove them as far as possible and give Nature a chance to cure.

These are so many masquerades of Fatty Ills that a brief alphabetical mention of them will be made, as follows :

Alcoholism is a masquerade of fatty ills. A friend suggests King Alcohol wears the mantle of fatty degeneration. It certainly is a carbohydrate; it certainly makes fatty noses, livers, kidneys, hearts, brains, etc.; it loads down all the systemic functions when used in excess. Alcoholism may be termed an acute locomotor ataxia, acute dementia, acute softening of the brain, acute idiocy, acute mania, acute epilepsy, so much so that it seems wise to introduce it here as a masquerader. Again, the alcohol and carbonic acid gas found inside the alimentary canal of vegetable eaters are factors in producing fatty ills.

Amaurosis, or partial or total loss of vision, from paralysis of the retina; and I presume most of my readers would not admit it is a masquerade of fatty degeneration. But such is a fact, and I do not feel at liberty to leave it out, notwithstanding the evidence is not so clear as in the other masks; and the conviction this is true is forced after long consideration, owing to the fact oculists assert amaurosis is mainly due to an excess of carbohydrate diet and that paralysis of the retina may be due to, and is part and parcel of, fatty degeneration. "According to some statistics," says Weir Mitchell, "out of one hundred and fifty cases of Bright's disease of the kidneys, fifty have retinal complications."*

The complex structure of the eye being of terminal tissues where the circulation has to

---

*"Diseases of Women," Doctor McNaughton Jones, page 82, London, 1890.

stop and turn back on itself, furnishes facilities for impeded or retarded circulations and renders it easier for paralysis to supervene than would be the case if the channels ran straighter; indeed the eye is often the first organ to suffer from fatty degeneration, as oculists have shown.

Amyloid is a starch-like body or bodies, appearing and disappearing in the urine in the first stages of Bright's disease. The mammæ and the liver have at times been found to be almost wholly amyloid; the same bodies are found in the brain, and many imagine they are normal — definite evidence that the line of demarcation between health and disease is not always clean cut. People apparently in good health present signs of latent disease; and so amyloid degeneration may come under both conventional health and conventional disease; at any rate, from the close affiliation of amyloid with normal fatty degeneration I think it should be regarded as one of the early stages of the latter, from a clinical point of view, for I have found this estimate safe and useful. Treated as a fatty degeneration I have seen amyloid yield very readily and permanently disappear. Note, however, that care must be take to distinguish starch grains from amyloid bodies.

The consensus of all medical opinion, as far as known, is that angina pectoris is due to calcareous deposits in, or degeneration of, the coronary arteries; these deposits are of the nature of fatty degeneration of the circular muscular fibers of these arteries, and are made up of atheromatous matters, mostly

cholesterine, which attain a hardness like stone; hence the term "calcareous." Lime deposits also occur along with the purely fatty, and their deposition also is probably due to the retarded and impeded circulation, and to the want of sufficient fluid in the system to keep the lime salts in solution. It is easy to see how fatty degeneration of the heart substance may follow the partial obliteration of the coronary arteries. There is mechanically retarded function, and likewise an element of neuralgia, which may be explained by the deposits diminishing the supply of nerve force because they partially cut off the normal blood-supply, and by a partial paralysis of the heart muscles because in their ill-fed condition the interval between the beats is not sufficient for rest and because they thus overwork. Overworked muscles are apt to have painful cramps, as in writer's and organist's paralysis; hence one cause of the choking pain, "angina," in the overworked and ill-fed heart muscles. Again, it has been reported, to anticipate a little, when facial neuralgia has been relieved by extirpation of the Gasserian ganglion or the infra-orbital nerve, that the ganglion and nerve have been found to be affected with fatty degeneration so frequently that this latter may be suspected to be a cause of the neuralgia, and that its treatment should be by Nature's own processes of metabolism rather than by the surgical changes wrought by the knife. I know of one case of surgical interference and removal of ganglion for facial neuralgia in which the pain returned in ten days and persisted until death. Why?

No surgeon could treat angina pectoris by extirpating the cardiac arteries or ganglia, but they can treat it through the interstitial and profound influences of proper nutrition, which obtain and reign in the most hidden, profound and vital parts of the body systemic. In order to give point and force to these words, the writer may be allowed to state that he has seen cures of this masquerade performed on these principles.

Aphasia is a term signifying loss of speech —literally dumbness; but medical language is flexible and does not mean that altogether, and it is employed rather to signify inability to use language fluently; it is the loss of a perfectly familiar word where the speaker knows what should be said but is unable to speak it. This in my opinion is nothing but a result of fatty degeneration of the nerve-ganglia centers in which is located the function of speech; and this degeneration is undoubtedly acute as well as chronic, while both are amenable to treatment by food, music, rest, and management.

Apoplexy is another very common masquerade. The essence of sanguineous apoplexy is when blood escapes from the cerebral basilar arteries, and is forced by vascular pressure into the substance of the brain or into the cerebral ventricles. It forms a clot, as blood usually does outside of live arteries, veins and capillaries, which clot by its abnormal pressure paralyzes usually the other side of the head or body more or less completely —sometimes pressing on the ganglia of the pneumogastric nerve and instantly producing death; at other times usually entailing a loss

of consciousness and motion, so that the erect subject falls as if struck on the head by a club or stone. But the real clinical, essential and exciting cause of apoplexy is the rupture of an artery by normal blood-pressure. The popular idea that apoplexy arises from an increased force of circulation has some foundation, but not the special significance that it arises from a weakening of the arteries by changing their substance partly into the flabby, soft, weak body of oil, lard, tallow, or grease. While it is true that an increased force of circulation is a causal element of apoplexy, it is truer that the degenerated artery gives way under normal heart pressure often during sleep, which is usually the quietest part of man's existence. To repeat, the essence of sanguineous and possibly of the serous apoplexy is a fatty degeneration. In addition, some writers state that the brain tissue around the diseased arteries is softened probably by the same degeneration, which if true only makes the claim stronger that this malady is a masquerade to be exposed by a better nomenclature if possible. The succession of apoplectic shocks or fits is explained by successive portions of the arteries becoming successively softened by the fatty degeneration progress, and giving way. It is merely a question of time, some parts degenerating sooner than others. The rational treatment of apoplexy should be directed to the diagnosis and removal of the fatty degeneration and the substitution of normal tissues.

In retinal apoplexy appear the same causative lesions as in cerebral apoplexy: The muscular coats of the retinal arteries are

softened by fatty degeneration in some form, and the normal heart pressure ruptures the vessels; the ophthalmoscope diagnoses the extravasation and the clots in the retinal substance. Were the real lesion of retinal apoplexy not concealed by its name it would be better, for then relief would probably be sought in an endeavor to eliminate the predisposing fatty degeneration.

Arcus senilis, the senile ring of the cornea, is a milky circle about the periphery of the cornea of the aged, and should be regarded as one of the simpler fatty ills, though it has been cited in court as an evidence of insanity. While it may be found in cases of unsound mind, it frequently occurs in the eyes of the perfectly sane. The transparent glassy cornea is nourished by inhibition mostly; hence there is a difficult circulation and the easier occurrence of fatty degeneration when the powers of life begin to fail. "Arcus senilis" is consistent with health, good or otherwise, and is another example of the frequent inadequacy of language to express an exact condition.

Atheromatous deposits are masquerades, as they "consist of globules of oil of the most varied sizes, frequently exceedingly minute, mixed with albuminous matter in the form of amorphous masses or flakes and molecules, plates of cholesterine, and granules of carbonate of lime."* They are usually found in arteries, especially so in the aorta, and take the place of the lining membrane and the fibrous and muscular coats. Surely

---

*Micrographic Dictionary.

it is a fatty degeneration, and shows the kinship of the latter to calcareous degenerations. All are due to the same cause, retarded circulation by chemical and mechanical means. No one who has seen an atheromatous aorta can deny that the circulation must be retarded and impeded by the marked roughness of the interior of the blood-vessel that thus becomes a secondary cause. The term is derived from a Greek word meaning "groats," or meal; and may be applied to tumors which from the closure of sebaceous glands and the retention of the contents accumulate into masses sometimes as large as a hen's egg; this latter condition is not so much of a masquerade as the term is, when applied to arteries; but if the science of language exists to apply to things nouns which indicate their nature, then "atheroma" is a signal failure in these days of higher criticism.

Over forty years ago I was lectured to on Bright's disease of the kidneys, and I have studied it ever since and cannot but believe it is a masquerade of fatty degeneration. Its characters are determined by three signs which must be present as a general rule in the urine, at the same time or in successive periods of time, viz., albumen, casts of kidney tubes, fatty epithelia; besides these, free oil, amyloid and catarrhal discharges in the urine, apoplexy of the retina, arcus senilis, glaucoma and puffy eyelids may be present. Rarely is albumen absent; it should be recognized as present when the urine becomes only slightly hazy from the nitric acid and heat test. The idea of this disease being an

inflammation, chronic or acute, of one or more kidney tissues is at least not a good clinical one. There is a necrosis and breaking down of parenchymatous substance sometimes wonderful to contemplate. Some fifty years ago I attended Warren Academy, Massachusetts, kept by Mr. A. K. Hathaway, who had Bright's disease. I remember well how he had uræmic coma in school hours—how he would lean back in his armchair against the wall, leaving dents in the floor which are visible to-day, I believe; how he would go to sleep during a recitation; how the boys would "catch on" to the situation and begin to break rules of order; how he would wake up suddenly and reduce things to quiet, even if he did shy a Virgil or Herodotus at a roguish boy's head! His case was treated for twenty years by my father, the late Doctor Benjamin Cutter, and among other things he used lamp-wick setons in the loins with much benefit. After death an autopsy revealed both kidneys as empty white lardaceous or tallow shells, less than one-quarter inch thick—the rest of the kidney substance was broken down and absent. How any one could live with so little kidney substance was a wonder to all, but the lesson taught was that the lesions were those of fatty degeneration, which softened the nephritic structures so that they broke down and disappeared in the urine, leaving the suet-like shell as evidence of the wonderful endurance of the human frame.

When I was a medical student at Harvard, Professor G. C. Shattuck spoke at length on Bright's disease, and employed exquisitely

beautiful colored and life-sized French plates for illustrations. The gist of his instruction was fatty degeneration, but the good doctor never gave any clue to really curative treatment. It seemed to me then, as it does now, that the magnificent foreign monographs on disease were sadly incomplete. If any one doubts that Bright's disease is a fatty degeneration resort should be had to the morphology of the diseased kidney, and let the histological evidence settle the question.

According to our definition of fatty degeneration as due to a retarded and impeded circulation, it is easy to see how it can apply to the kidneys: The circulation in the papillæ, the Malpighian tufts, the urinary tubules, must be naturally somewhat impeded because of their tortuosity; there is constant excretory action and liability to overwork; the tubules are deprived of their epithelia — filled with casts, albuminous, fibrous, or waxy; the cells and tubules are loaded with fat globules or with waxy matter or amyloid,—all of which make things worse by mechanically obstructing the circulation of blood and urine. The loss of albumen from the blood and the retention of urea tend to weaken the system and retard the circulation more.

That paralyzing foods have something or much to do with the retarding of the circulation and keeping up of the fatty degeneration has been often proved to me, and to others, by the results accruing upon the withholding of and substituting a diet that would not induce these paralyzing effects—a diet that would be assimilated with the minimum

expenditure of vital force, and yet furnish the maximum of potential energy to the system. This history is almost uniformly the disappearance in a shorter or longer time of the albumen, casts, and fatty epithelia, one or all, and by their reappearance when the paralyzing foods are eaten again. To be sure these results are affected by the way in which the patient expends life force. If wasted in work, worry, or pleasure of body, soul, or mind, the abnormal morphologies will be longer in disappearing, or may not entirely disappear; or if they have disappeared, under the above losses of vital force they will reappear, even if the food is all right, and more rapidly if the food is all wrong. A cheerful disposition aids the circulation.

Acute Bright's disease I have known to disappear in less than a week by following this line of treatment, but it may require two or three years in chronic cases.

Bright's disease of the lungs is another fatty masquerade. Some years ago an eminent physician asked me to see a patient with consumption, who had had the best local and metropolitan consultant talent—at the rate of six hundred dollars a month for the latter; she was in bed, feeble, pale, coughing hard, emaciated, with rather violent heart action, and night sweats; physical signs of lesion of left upper third lung front; hæmoptysis severe. Sputum with granular and crystalline triple phosphates, giant mucous corpuscles filled with gravel; no lung fiber; blood did not show the morphology of consumption. Urine, hyaline with fatty casts

of the kidney tubules and fatty epithelia; albumen to one-half the bulk of specimen—thus evidencing fatty degeneration of kidneys as well as of the lungs, for the blood gave no evidence of consumption. On mentioning this to the late Doctor Louis Elsberg, he remarked the Germans recognized a Bright's disease of the lungs; and he agreed with me in diagnosis on this description. Certainly there is no good reason why lungs should not fattily degenerate as well as any other organ, nor why Americans should not adopt this form of disease in their nosology; had the other medical gentlemen who saw the case not been satisfied with the lung lesions as a sufficient cause they would have explored the urine and got the same striking and positive result! This is a lesson, and teaches one should never take a chronic case without exploring the morphology and chemistry of the urine; indeed this is a far better means of daily testing a case than the study of the pulse or temperature.

Ruptured or broken heart and fatty heart are not uncommon. Once I was summoned in greatest haste to a lady very ill. She was dead before I arrived at her home, and an autopsy revealed rupture of the left ventricular posterior wall, a pericardium filled with blood, and the muscles undergoing fatty degeneration. With as good reason as exists for cerebral apoplexy this might have been called cardiac apoplexy, for there was the same giving way of the muscles from fatty degeneration, the same extravasation of blood, etc., but with death from loss of blood, not from its pressure, as in some cases of

cerebral hæmorrhage. When the heart muscle is fatty it is liable to break at any time without unusual effort, as in the case cited. The possibility of producing fatty degeneration in phosphorous poisoning in so brief a period as twenty minutes should be remembered. Possibly phosphorus interferes with capillary and interstitial nutritive circulations, so as to cause degeneration.

The changes of nutrition in our bodies are far more rapid than usually surmised. If the chalky, friable textures of dentine can be changed to firm normal fibrous texture in three months' time (as has been reported), why not more rapidly in the softer tissues? It is a remarkable fact, one I have often noted, that when cases of fatty heart are treated on the principles here laid down, I have seen the normal loudness of cardiac pronunciation reappear in the course of a few weeks, not to say days. Give Nature a chance and she will replace fatty cardiac muscles with healthy ones!

Catalepsy is also, I think, a masquerade, as in my experience it frequently presented all the signs of fatty degeneration—*i.e.*, oil in the blood, fat in leucocytes and albumen, amyloid casts, and fatty epithelia in urine; also cystine in the blood, this traced to the eating of forbidden yolks of eggs; there was also vaginismus, uterine anteflexion and hyperæsthesia in one case. The fact that local treatment—*i.e.*, reposition by uterine sound—with vaginal and intra-uterine iodoformization and general treatment of fatty ills as here laid down, were followed by a cure of catalepsy in three months' time and of the abnormal signs

in six months, save fatty epithelia which disappeared months later, certainly justifies the mention here of catalepsy as a masquerade of fatty degeneration.

About twenty years ago I consulted some eminent Boston oculists as to the cause of cataract, and all agreed it is a "degeneration," though of what kind they knew not. I got quite a number of cataractous lenses from ophthalmic surgeons, studied their morphology and photographed them, and with the result that I decided it must be due to a fatty degeneration. The microphotographs I took show it. Later mentioning this fact to Baltimore oculists they at once declared our German *confrères* had arrived at the same conclusion. Accordingly I think it is safe to include cataract among fatty masquerades. If it is natural to expect fatty degeneration in the cornea—*i.e.*, arcus senilis—much more is it to be expected in the crystalline lens which obtains its nourishment through its capsule by inhibition, and is a hyaline, glassy, chitinoid substance to begin with. The dislocation of the crystalline lens by a blow retards and impedes the circulation needed for its nutrition and thus produces traumatic fatty degeneration or cataract. The obliteration of the ocular arteries by the deposit of fatty or calcareous matters must impede the circulation in the eye and promote the fatty degeneration. In London, in 1889, I asked Sir Benjamin Ward Richardson whether did not both he and Doctor Weir Mitchell, the former in 1852, the latter in 1861, produce cataract in ten minutes by injecting a teaspoonful of a saturated watery solution of

sugar under the skin of a frog or a guinea-pig. He replied in the affirmative, adding the result was produced "even quicker than that!"

It seems incredible that so generally used a substance as common white sugar should produce cataract in so short a time, but the facts are well authenticated and need no repetition unless in penal physiology on man. Sugar works right in the line of producing fatty degeneration in man, and should not I think be so recklessly and profusely used as now. A teaspoonful of sugar in tea or coffee, taken by a case of Bright's disease where the morphology of the urine has become normal under treatment, must be expected to bring back the abnormal morphology; in any event this is the way to detect such lapses in diet of patients unless they have become firmly established in the way of cure. In my opinion the defective organs of vision common among schoolchildren are due to feeding upon carbohydrates in excess. Probably the behests of social ethics in putting sweets to the fore as food have had more to do with the production of lenticular troubles than any other cause. Avoid the use of sugars in excess (better altogether) if you want good crystalline lenses. No "sugar trust" to help bring on fatty ills for me!

Circulation impeded from embolism is another fatty ill. Thrombi and emboli are made up of fibrin filaments which are large and massive, in threads curled upon each other by rotation and twisting in the circulation of the blood. Often these emboli embrace within their substance colloid jellies,

crystals of oxalate of lime, triple phosphates, etc., which are formed in the blood. Emboli are also made up of white blood-corpuscles in addition, their huddling together in the blood under the microscope is regarded as a sign of embolism (there are emboli of fat).

The conventional idea that thrombi are formed in and on the valves of the heart by some action of these same valves is probably incorrect; more likely that the edges and angles of the valve surfaces present mechanical arrangements whereby the clots or thrombi already formed are caught, incorporated together, and grow; this is rendered more feasible because the blood-stream makes a full stop at the ventricle funda, and is reversed in its direction. During the instant of stasis or stopping an opportunity is given for the adhesive fibrinous masses to be caught on the edges of the valves, especially if the valves are sticky. The valves do not originate the thrombi from the normal subtile, all but invisible, fibrin filaments of the blood, but accrete them from the larger, coarser and more massive abnormal fibrin filaments caused by the action of sour fermenting food in the alimentary canal.

It is easy to see from the foregoing how the circulation is impeded by emboli, and how the parts supplied by this impeded circulation may fattily degenerate; at the same time I do not claim that all the results of embolism are necessarily the result of fatty degeneration, but only that some of them are and must be. By taking in this idea can be

understood the importance of regulating the diet in all cases of embolism; and diet and embolism together constitute an American idea destined to honor the practise of medicine everywhere and for all time to come, it being one of the most important dicta of this or any age that embolism can be induced at will by feeding fermenting foods, and likewise that embolism can be cured by feeding on food that does not have acetic acid fermentation—food that requires the minimum of vital force for Nature to work with in the functions of the living human body. In this way there will be no growth of excessive alcoholic and vinegary ferments, which are found associated with thrombosis. It is easy to understand how emboli and thrombi are causal of fatty degeneration, because they mechanically obstruct, retard and impede the functions of all organs whose blood-vessels they block up.

Intestinal concretions, many of them at least, are made up of the fat acids accumulated from the food eaten—the morphology of the fæces shows crystalline masses of stearine and other fats; also of triple phosphates, uric acid, urate of soda, stellurine, sugars, oxalate of lime, cystine, pigment matters, etc. Other intestinal concretions are calcareous. In the Museum of the Royal College of Surgeons, London, there is probably the largest collection in the world of intestinal concretions, and some weigh sixty and even ninety pounds. The close relation between fatty and calcareous degenerations makes their association in concretions not strange. A recent patient produced concre-

tions from the bowels which had been termed "gall-stones," but as they were always voided after the drinking of olive oil, and their structure was made up of minute oil globules, it was evident they were partially digested masses of olive-oil fats.

When a patient complains of general debility or general weakness and no sign of physical trouble appears but those of fatty degeneration in a mild degree, it seems rational to regard this lesion as the causal one. I have now a case of premature fatty degeneration of this kind. She is a good patient, but has an almost incontrovertible opinion that nothing will do her good and that she will never be any better; not that she objects to this on philosophic grounds, or is not reconciled to the situation. I find as the signs of fatty degeneration clear up this mental debility clears up also: still I have hard work to persuade her to continue in the prescribed course to replace the normal tissues. Of course general debility has other causes, but so long as it masquerades in fatty ills it has a place here, and not to be forgotten.

In a recent case where certain physicians signed a certificate that the patient "suffers from post-paralytic dementia which would induce homicidal mania," the probate judge was asked to deprive this wealthy man of liberty and property; and both these physicians on oath stated that the man's brains were "rotten, *i.e.*, softened and decomposed," yet gave no clue to the real cause or essence of the supposed rottenness. The case was compromised. Had it gone on the other side would have testified that while there were

evidences of fatty degeneration in the brain yet there was no dementia nor homicidal mania. Admitting dementia, would it not have been better to have said that the "rottenness" came from one of the forms of fatty degeneration, as is usually the case—in other words, would it not have been wiser to have affirmed that the circulation in the brain was impeded and retarded by fat metabolism or by embolism plugging an artery with fibrinous concretions, impeding circulation; or that the resulting want of proper nutrition interfered with the functions of the ganglionic nerve centers whereby they would not cerebrate normally nor have the capacity for normal judgment or reason? As a matter of fact the experts summoned by the defendant, who saw him in an unbiased way, could not agree with the above dictum. The hemiplegia of the right side some twelve years previous, which Nature cured spontaneously, and the hemiplegia of the left side in 1887, the urinary and blood evidences, were in favor of the lesions being due to fatty degeneration. As to the idea of homicidal mania following hemiplegia, one expert said it was simply ridiculous, as the usual course is the other way. When it comes to be generally known that dementia in many cases is nothing but the result of a fatty degeneration and that fatty degeneration is curable, new light will be thrown on this malady; indeed the treatment of this case on the plans here advocated resulted in removing the stigmata of fat metabolism, with marked improvement and conference of force, so that he survived the trials of one of the most terrible adversi-

ties a sane man can be subjected to. If a brain is unsound we must expect unsoundness of mind, but it makes all the difference in the world if those who treat it do so merely by name instead of elucidating the real cause under which it masquerades.

When a case of diphtheria presents albumen, fatty epithelial and casts in the urine, while it may not be a masquerade such as I have been considering, it comes near enough to it to be treated clinically as such, for the cure is not complete until the signs of fatty degeneration are removed by systemic treatment. It may be that the poison of diphtheria does impede, obstruct and make languid functions, and thus becomes a cause of the fat ill; but however this may be, clinically speaking, the treatment should aim to remove these causes. I venture to predict far better results when this principle is utilized. It is much better to treat diphtheria beforehand by feeding so as to have healthy people on whom diphtheria can have no power.

Strictly speaking dropsy is not a disease but a result of obstructed functions, that of circulation for one. So long as the profession employs the term clinically (and the laity think it a most fatal disease, as a rule giving up all hope of help on its professional announcement) just so long when it is present it must be referred to as a pathological entity at the bedside. It is known as œdema, anasarca, pleurisy, cardiac effusions, etc., acute or chronic according to amount, location, and time. The whole human body is wrapped in an environment, outside and inside, of interlaced webs, nets, membranes,

and fascia made up of white fibrous tissues, straight, wavy, and curling, serving to keep the soft parts in place; the interstices form areolar spaces mechanically dilatable and expansible, capable of distention by air, called emphysema; by fat, called obesity; by osmosis of blood-serum, called dropsy. From the top of the head to the soles of the feet these areolæ communicate with each other, so that puncturing with a knife through the inside cheek mucous membrane to beneath the skin the subject can inflate the whole body surface with air; and thus a drowning man could make a life-preserver under the skin; more, this process has been recommended to protect from drowning, though it must be feared the application would be impossible or impracticable to say the least!

It is well agreed that where there is obstruction to functions, specifically of the blood circulation, the sanguineous serum is apt to exude and collect in the areolar spaces referred to, especially in the lower parts, by gravity, and where there is fatty degeneration. Indeed I cannot recall a case of ascites or anasarca where some evidence of fatty degeneration was not present, which is not strange, considering the fact fatty degeneration ills come from retarded and impeded functions, especially of the vascular system. So dropsy and fatty degeneration have the same parentage and hence belong to the same family. There is no good reason for the masquerading of dropsy, especially as it frightens people. From the cases of dropsy I have seen treated as masquerades of fatty ills I feel warranted in formulating the fore-

going conclusions. I have seen cases of dropsy recover when, humanly speaking, they would have died under conventional treatment, and thus dying would have given cause to the panic of mind that exists in the laity when swellings and watery bloats proclaim to all around the distention of the areolar tissues and great cavities specially described by the terrible word "dropsy"

I am not sure but fatty degeneration has a good deal to do with dropsies from inflammation, as pleurisy, pericarditis, peritonitis, synovitis, etc., coming of course from obstruction by deposits of coagulated lymph, for I have found fatty deposits in pleuritic effusion so copious as to line three-fourths of an inch deep the chest-walls of the left pleura. Also by the plans for treating fatty degeneration I have within two months effectually relieved two cases of chronic fistulous pleurisy when it had been proposed to excise a portion of the ribs as a last resort.

The following from the pen of the late Professor Joseph Jones, M.D., LL.D., of New Orleans,* evidences that vegetable food will induce dropsy in the yellow-bellied terrapin (*Emys serrata*), previously carnivorous:

Starved for four weeks in a tub of water, then fed forty-two days on purslane (*Portulaca oleracea*). Blood color intermediate between arterial and venous. Serum changed from orange to light yellow. Cellular tissues permeated by serum. Abdominal and chest cavities contained large amounts of this

* "Investigation, Chemical and Physiological, Relative to Certain American Invertebrata," Smithsonian Contributions to Knowledge.

serum. Albumen, fatty and extraction matters, 45.38 in 1000 parts of blood. In another terrapin starved for twenty-eight days, and then kept in water and on purslane eighty-eight days, weight 27.125 grains. Serum was light yellow. Two fluidounces of serum in pleura and areolar tissue along back. Black and brown masses in pancreas contained large yellow composite cells, globules. The only cause that can be assigned for this degeneration of structure (fatty, crystalline, cancerous) is the character of the food. I have never noticed this in normal terrapin.

Other terrapins which had been treated in a similar manner were examined, and the results in every instance corresponded with those detailed as above.

In most instances the solid constituents of the blood were less under a vegetable than under an animal diet.

The intestines are small in carnivorous and large in frugivorous Chelonians. . . Another marked effect in a change of diet was the production of dropsical effusions.

Vegetable food in excess then is a chief cause in producing dropsies and fatty ills in man.

All the cases of epilepsy I have studied have presented the stigmata of fatty degeneration at different periods of time, but not all together. Dr. M. G. Wheeler of Chelsea, Massachusetts, tells me that he never had a case of epilepsy without albumen in the urine! Now while albumen alone does not complete a diagnosis it makes it very probable that a careful morphological study would have supplied the missing links of diagnosis of fatty degeneration. Again the disappearance of all the signs of fatty degeneration has been followed by the cure of epilepsy, or to put it

differently, the epilepsy was not cured before the said signs disappeared; it is probable that they had something causal to do with the cases. At any rate they are good enough clinical clues to unmask a masquerade.

Since gall-stones are made up of cholesterine, a fat acid, they come within the same scope. Cholesterine is a normal product of the liver, and should flow off in solution into the small intestines; but when it accumulates in crystalline masses enough to clog the gall-bladder, not to say the gall, mechanical obstruction is formed to the circulation of bile as well as of blood. Gall-stones must thus cause the fatty degeneration of the gall-bladder which cholecystotomists report as a great trouble in their operations, but this is rather a result than a cause. The cause lies deeper in the same kind of food referred to above and also in not having water enough in the system to keep the saline bodies and fats in solution. Hot water is one of the best promoters of intestinal secretion; it keeps the liver well washed out, removes the gases from fermenting food which paralyze the alimentary canal and abdominal viscera. Thick liquids flow less quickly than thin. If, for example, when the bile is inspissated and thickened so that the gall-stones crystallize out, as salt does from watery solution when the water is evaporated, one way to relieve this is to use plenty of distilled water, which contains no salts and which will thin the bile. Indeed, calculi or gravel of the blood, urine, salivary glands, intestines and other parts may all be rationally treated on the plans of quickening a retarded circulation by the use

of hot water. In the words of Doctor A. H. Ferguson, of Chicago:*

Let the physician who is in the habit of saying to his patients suffering attack upon attack, "Oh, it is only gall-stone colic," study these changes and then apply the postponement of seeking surgical relief to his own person!

The Golden Rule is aptly befitting.

Can the milder forms of cholelithiasis be cured without the knife?

Why not? Why does this fatty excrementitious substance (cholesterine) not go on to its stercoraceous transformation and not form stones in the biliary system of ducts? Is it a conservative act on the part of Nature to prevent absorption of the constituents of the bile in catarrhal and obstructive conditions of these ducts?

What is the relationship of cholelithiasis and gouty and uric acid diathesis?

Not water enough.

What local or blood changes predispose to their formation?

Retardation and impeded motion for want of liquidity.

What diet, medicine, or hygienic surroundings might prevent them?

Beef broiled or roasted and hot water, and medicine sparingly as indicated.

Solve that question and the surgeon's knife, needle, or button will happily be less in demand.

Better solve it with distilled water

---

* *The Journal of the American Medical Association*, January 19th, 1895.

Experimental researches in these directions are very enticing and should bring forth most beneficial results.

They have already been made, and this whole paper is a reply.

Probably never was the term "heart failure" more popular than now, yet it really means little in itself, for death by a bullet through the heart is "heart failure;" or, if the heart were so embarrassed with fibrinous concretions and valvular lesions as to stop, it still would be "heart failure." The title expresses a result, not a lesion or a cause. But it *is* used as a cause, and must be accepted so long as it is used clinically, however much one may dislike its not representing actual conditions or history.

From the fact that so many people live on food which is calculated to give fatty degeneration by impeding the circulation, not only may the heart fail because it cannot overcome the obstacle, while it tries hard to do so, but in most cases it probably is itself weakened by the substitution of fat in place of its muscular tissues. The fat sometimes found in and around the heart, if it does not replace other tissues save by pressing on them, is not to be regarded as a fatty ill, but rather as obesity.

In my opinion in many of the cases of so-called conventional "heart failure" the failure is due not only to the fatty ill but to the direct paralyzing influence of the stomachic and intestinal gases acting on a previously weakened or fatty heart. Secretary Windom's death at a Delmonico banquet during an after-dinner speech may have been

one of these cases. So far as I could learn he had symptoms of fatty degeneration before he had eaten this dinner—he used his forces to make a speech before the food was digested; he took away force from its work of digesting food, the stomachic gases acted by osmose, paralyzed the heart, and it failed. Such an accumulation of gases in the stomach is common at two or three o'clock in the morning. Doctor J. Marion Sims and others have died of "heart failure" at about this hour and probably from gas accumulation acting on the heart as just noted. Could draughts of hot water (which have wonderful effect in causing stomachic and intestinal muscular contractions and by starting the "wind") be freely imbibed many of these cases could probably be saved by thus removing the immediate cause. Cold water will also expel gas, but not nearly so readily. It is more probable that the heart would not succumb to this depressing influence were it not itself more or less fattily degenerated. Both Secretary Windom and Doctor Sims were at a time of life to have fatty ills. I know Doctor Sims ate things that would produce fatty ills. Striking his breast he once replied to my remonstrances, "I can eat anything." So also died that great physician Doctor Louis Elsberg, after I had relieved him of all signs of fatty degeneration, masquerading as Bright's disease of the kidneys, he acknowledged his cure but insisted upon eating what he liked So also died another friend lately of fatty degeneration, though he asked for but would not receive the gospel of food salvation from his fatty ills. He said, "I

am in the best hospital in the world," yet they gave him the very things to eat which kept his heart fattily enlarged and weakened.

Why should fatty heart masquerade as "heart failure?" Why not come out and make names as chemistry and commerce name things? By special invitation Doctor Da Costa lately gave a lecture on weak hearts to the Medical Department of the University of Pennsylvania, at which the Provost, Doctor Pepper, and other dignitaries were present in honor of the occasion. In this lecture the diagnosis of fatty degeneration was based on "elderly gouty subjects, rigid arteries, and flabby tissues, with breathlessness on slight effort, as going up ascents."

The moment that it is conventionally understood that fatty ills are at the bottom of heart failure, that moment will there be a chance for more rational treatment. This is said notwithstanding Doctor Da Costa's dictum that "in the fatty heart the disease may be palliated, but in the end it is fatal." I speak from personal experience.

Now regarding deaths from heat. The *New York Tribune* of August 14th, 1896, reported a policeman found dead. Foul play was feared, but an autopsy showed that

> Death was due to heat, to which . . . he was especially susceptible on account of fatty degeneration of the heart. . . He was fifty-three years old About four months ago he had a slight stroke of paralysis and a fall. . . . There were charges pending against him at police headquarters for having been found asleep . . . when he should have been on duty

In the same issue there is an account of the sudden death of Henry Van Deremde

apothecary manager, found dead by a clerk, who in two hours after was himself found unconscious. The death and the prostration were due to the excessive heat. A policeman found the clerk lying insensible on the floor by the side of the dead body he sat to watch. The coroner and the examining physicians certified that death was from apoplexy superinduced by heat. This puts the case on record as a fatty ill.

In the other case the paralysis and improper sleep, with the condition of the heart, suffice for the same diagnosis.

It is a question, If they had been perfectly healthy would the heat have killed them? I trow not. Their bodies were rotten with fat metabolism; they succumbed as a decayed post is easily overturned by a blow. There is no doubt that the heat was sudden and excessive. It has been said that more deaths of men and animals were reported in New York during this heated term than ever before. Horses died by the hundreds.

If the cases were all like these reported here, then they were masquerades. People eat largely of carbohydrates during hot weather, because they think animal food unseasonable, a conclusion I doubt. Carbohydrates burn up and make heat; ice cream is good to produce warmth; salads easily ferment. Lean meats broiled or roasted build up the entire body and give energy to replace the tremendous waste of salts carried off in the greatly increased sweat action. Again, outside of the loss of force by sweating people are directly prostrated by the action of the excessive heat on the nerve centers. The

practise of the writer and corroborator has been to prescribe lean meats broiled or roasted, with boiled potato or toasted bread or rice; no ice water, but cool drinks if desired; but hot water quenches thirst best of all things.

Hebetude or listlessness and slow movements I have seen in fatty ills. One patient who had Bright's disease and was a multimillionaire said he was so lazy and slow-going that he thought of hiring a man to go behind him and apply a horsewhip when he lagged. This case was entirely relieved of the signs of fatty degeneration, when he said he could "run" his own case, and he did — "run it under ground" in less than two months.

I have great sympathy for lazy people. Often if some patients could be lazy they would get well faster, but as I grow older I am more and more convinced that the hebetude and laziness in question might be traced to fatty ills, because the sufferers have no reserve power, soon fag out, and are listless for very good reasons—*i.e.*, the loss of muscle fibers and nerve force from interstitial substitution of fat for the nervous and muscular tissues.

Hæmatophilia is another masquerade of fatty degeneration, as is any form of bleeding or hæmorrhage due to rottenness of blood-vessels of the capillary and venous kind, which rottenness arises from a substitution of lardaceous, waxy, or steatomatous elements. It may be said also that where the extraction of a tooth threatens life because of profuse hæmorrhage, it comes under this head.

Hemiplegia, or palsy of one-half of the body, is a common masquerade of fatty degeneration of the muscular coat of the basilar arteries, as before explained. The pressure made by the extravasated blood on the cerebral substance exerts by decussation a paralysis on the opposite side of the body, and sometimes of the same side of the body. It is associated with apoplexy, and is mentioned here by itself because the name is used by the bedside clinically, and is generally regarded in clinical medicine as a disease by itself. The severity and persistence depend on the topical character of the effusion, as copious or limited in extent.

The treatment of hemiplegia rationally comes under the head of fatty degeneration, as I have taught for many years. It is unwise to expect cures while causes go on at work just the same as before the treatment.

Hyperæsthesia, again, is another general masquerade. The following case is adduced in evidence:

December 30th, 1894, a dentist of New York died at the age of about 71 years; had been ill for more than four years. His blood at the outset had shown oil from beneath skin, and fat in the white corpuscles. Albumen, fatty epithelia, and kidney casts were occasionally found in the urine, singly and together. When free from albumen, casts, and fatty epithelia, catarrhal discharges would be present in the urine. At times the urine would be normal. It should be said that this urine was carefully studied by me daily for months. By partial treatment the abnormal forms and albumen were mostly removed, and there was an improvement in health.

Two and one-half years later he had in the right side of his neck a large chronic diffusive abscess which d ssected in between the muscles and fascia below the mastoid process, and afterwards apparently healed. Then the right lymphatic and submaxillary glands became involved. The parts under and at the right angle of the lower jaw were swelled, thickened, and hardened. The aspect was so malignant that after aspirating and obtaining naught but blood a doctor of New York pronounced it cancer. This opinion was sustained by the terrible hyperæsthesia of the mouth, tongue, and throat; by a catarrh of the parotid and salivary glands, which was constant, copious, and agonizing; by cachectic appearance; by emaciation; and by this distinguished surgeon's large experience with cancerous submaxillary glands, he having extirpated over two hundred. To be sure, crenated pus without cancer-cells was found a few days after over the site of aspirated puncture.

Later the doctor, in my presence, aspirated thoroughly again. The needles brought forth a bloody fluid, which microscopically showed oil in large and small globules, curling fibrous tissue resembling lung tissue found in sputum, free red and white corpuscles, and fibrin filaments massed in threads and clots.

This would appear to have been a fatty ill from the fact that the two aspirations were followed by no malignant changes; that the dense lymphatic swelling would diminish and increase from time to time; that there was never any unpleasant odor; that there was no previous history of cancer; that there was unmistakable evidence of fatty degeneration for years before; that the lymphatic glands could have been inflamed from the dissecting cervical adjacent abscess, as in other cervi-

cal abscess histories; that save redness and hyperæsthesia the oral cavity and pharynx were normal; that the tongue was soft as silk and its glands were free from induration; that the hyperæsthesia was beyond all evidence visible to careful inspection; that the gentlest touch of his whiskers, nose, forehead, site of diseased glands, indeed all over the body (he could not bear to have vaselin rubbed on his feet or toes), caused agonizing subjective pains; that he persisted in asserting that it was agony for him to swallow (dysphagia) anything, to move his jaw, to speak, etc. From these things the writer could not concur in the diagnosis of cancer, but said that in his opinion it was a case of lymphadenitis with fatty degeneration, including hyperæsthesia and hypersecretion of the salivary glands.

The morphology of the oral discharge, studied very often, showed mucous corpuscles, bacteria, pavement epithelia, red blood-corpuscles, white blood-corpuscles often with red blood-corpuscles inside of varying sizes, that appeared to come from the diseased lymphatic glands, which I regard as red blood-corpuscle makers—*Leptothrix buccalis*, —crystals of the triple phosphate of lime, magnesia and soda, and the aniline blue and emerald green pigment matters that are found in connection with fatty degeneration in the blood especially along with portal obstruction.

The hyperæsthesia was as bad as any uterine hyperæsthesia I ever saw, and this is saying a good deal; it was the great and most prominent symptom in the case. At

first I attributed it to the rare overaction of the salivary glands, that weakened them and then translated their neurasthenia to all other parts, as is seen in cases of nervous prostration of uterine origin for example. As further evidence that this case was a masquerade of fatty degeneration I may add an autopsy revealed the right angle of the jaw standing out and away from the tumors as if there were no tumors; the hardened subdermal lymphatic gland was only half an inch in diameter, cut with a slight grit, under microscope showed white fibrous tissue straight and curled, some granules of fat, no elements of cancer form—indeed such had never been found in this case by me. The submaxillary gland appeared like a fatty kidney, somewhat dense in feel to the knife. Under the microscope the glandular epithelia were found filled with fat in large and small globes and in granules much the same as the fluid obtained by the second aspiration presented; besides, the stroma or parenchyma of the gland was studded with immobile fat granules, while the fluid fat granules presented automobile movements such as are seen in milk. The glandular structure was homogeneous, save this heterologous tissue. The cells appeared like liver-cells secreting fat. The gland was evidently fattily, not cancerously, degenerated. The forefingers of both hands successively introduced through an opening made at the right angle of the lower jaw fully explored the pharynx and base of tongue. No enlarged lingual glands nor lingual induration were found. The larynx was felt to be normal. Arytenoid cartilages,

epiglottis, and glottis unaltered. Vomer and nares normal; dome of pharynx normal. The interarytenoid band and the anterior wall of the mouth of the œsophagus were not thickened nor abnormally changed. Doctor John A. Cutter verified the examination, and had the case been cancerous the exploration should have shown it.

But the question is, how can this terrible hyperæsthesia be explained better than by considering it not at all as coming from cancer? Cancer does not usually cause pain away from the site, all over the body, nor affect the whole body so that the slightest touch, the gentlest feeling of the pulse at the wrist, causes the severest pain. Should it not rather be considered as a masquerade of fatty degeneration, like angina pectoris and tic douloureux? Surely fatty degeneration was the most constant and prominent element in this case. The patient never fully followed out the treatment for fatty ills; would not live on broiled chopped beef alone; refused nutritive enemata. He refused to eat because of the agony of swallowing and increase of saliva. He complained of choking while eating, but never choked nor regurgitated food through the nose or mouth, as is usually the case in stenosis of the throat. His mind was very much on the alert; he noticed all that was going on, as conversation, deeds, questions of domestic ethics, etc. He got but little sleep without medicine — quarter-grain doses of codeia sufficed, and lactucarium served for a time. Towards the last the abnormal lymphatic and salivary secretions ceased to flow Refusing to eat he died of

starvation. Could he have fed like other cases he ought to have got better.

At one time my mind was made up to cut through the diseased gland for diagnosis and local stimulation, but was deterred by the opinion he held that it would increase the disease to extirpate it. Had either been done I think it would have proved good for both patient and operator. However, so long as the patient would not come down to strict business in the alimentation needful to replace fattily degenerated tissues there is no doubt that the fatty ill would have progressed to a deferred death.

This idea of some neuralgias and hyperæsthesias being due to fatty ills opens a new door to efforts for relief of pain by means of food mainly.

Insanity sometimes figures as a cause when it is only a result of fatty degeneration in the cerebrum from retarded and impeded circulation, or from embolism. It is not insisted that these alone are causal, but that they sometimes cause insanity—a very broad term, which in law covers all its varieties. Insanity from fatty degeneration is evidenced by imbecility, arcus senilis, fluid fat in the blood from beneath the skin, occasional or constant fatty epithelia, casts of the kidney tubes, and albumen. It also may be recognized in addition by the ophthalmoscope revealing fatty changes in the eyeball. Insanity from this cause should be reckoned as a masquerade of fatty ills, since its cause may be unwittingly kept at work by food which, thought to be the most wholesome, produces the ills it is designed to evade.

One of the most learned and successful physicians, said to have a larger income from his profession than any other American, told another medical man that he diagnosed locomotor ataxia from the fatty degeneration in the white blood-corpuscles as well as by the rottenness of the red blood-corpuscles, which comes between the rottenness of the red blood-corpuscles of rheumatism and consumption. In 1892 I had a case of locomotor ataxia when at one time locomotion was impossible without help. While it was being regained the right arm would be lowered by the torsion of the trunk, so that the hand would nearly come to the ground. Several other physicians saw the case, and all coincided in the diagnosis, and excepting myself made a fatal prognosis. The man was then about thirty years old, and suffered terribly with pains. He was put on strict diet, and after much tribulation was restored to health, so far as locomotion and the common duties of life are concerned, but his handwriting is still ataxic. This case is mentioned because I think I ought to have detected the prelocomotor ataxic state in him. I did find the fat in leucocytes occasionally, albumen in urine, casts occasionally, and fatty epithelia, and I was on the lookout for kidney destruction. The essence of locomotor ataxia seems to be in a thickening of the fibrous sheaths of the spinal nerves, as well as a degeneration of the spinal cord itself. I must say that the fibroid and fatty degenerations are very closely akin; clinically they are alike, to be cured by Nature's being given plenty of force to work with, and mostly by stop-

ping causes—to wit, fats and carbohydrates in too great excess.

Melancholia means "black bile," which the ar ients recognized as a symptom of a form of insanity, and perhaps truly. Black bile is apt to be inspissated; and thus retarded and impeded in circulation it will take but little to make the normal fatty cells of the liver, complex in its anatomical structure and physiological functions, run over into fatty degeneration—that is, if our definition is correct. The relation of liver troubles to the condition of the nervous system is very close and depressing, as instanced in the section on general debility: one reason is, if we consider life to be a question of expenditure of vital force, that it must take more force to run the liver when its circulation is sluggish and difficult; then this abstraction of force takes from the other organs—the brain for example,—and the outcome is, there is not force left to run the brain properly. From all this follows the depression of the nerve centers called melancholia. Of course the science of language, notwithstanding the higher critics, is imperfect, and other causes may exist for melancholia; but not being in position to rewrite the English language one must be content with nomenclature as it is, and satisfied with this little hint to try to show the way in which the thought of those who come in contact with this presentation may properly employ their investigations. Look out for fatty degeneration in melancholia!

Neurasthenia is a term used to denote a nervous prostration whose origin is unknown

or obscure, and from what has been said it may be inferred that fatty degeneration may be a cause; indeed I am convinced I have seen neurasthenic cases of fatty degeneration, and that there is always a cause for neurasthenia, discovered or not. The kinship of male neurasthenia that arises from a peculiar urinary catarrh, which often disappears and is replaced by fatty epithelia, casts of kidney tubes, and albumen in the urine (one or both), is I think very close, and makes it proper for neurasthenia to be classed as sometimes a masquerade of fatty degeneration. At any rate it is worth studying in this practical connection.

Paraplegia is a variety of hæmorrhagic apoplexy where both sides of the body lose their motor, and sometimes sensory, functions because of the greatness of the pressure on the brain; it is mentioned because it is a masquerade of fatty degeneration not to be overlooked. It is due to a more extensive rupture of the cerebral arteries than usual, because the normal strength of these arteries has been weakened through the substitution of muscular and sometimes fibrous tissues by oleic acid, palmitic acid, and cholesterine, etc., which substances have no textile strength to resist centrifugal forces as they do centripetal forces when blood is forced and buried in the outside soft cerebral parenchyma. Paraplegia is mostly a question of strength of structural elements whose nature is softer than normal. From this point of view it is wonderful paraplegia does not oftener occur.

Paresis means general paralysis of motion (and not of sensation), more or less complete;

if complete there would be no paresis, because death would at once follow from heart paralysis. It is rather a paralysis resulting from the degeneration of the tissues of the body, not confined to the muscles, but embracing the structural elements of the nerves, fibrous tissues, etc. It is most likely to be fatty in some one or more of its forms. There are partial responses to stimuli of the sensory or motor nerves, but there is also a relaxation which shows that the neurotic system is paretic. Instead of masquerading as a separate disease it should appear as only one of the manifestations of fatty ills which demand an interstitial nutritive treatment whereby Nature can and will restore the degeneration, entirely remove the fat intruders, and thus cure on common-sense principles.

Pernicious anæmia is believed in America to arise from terminal arterial vessels fattily degenerated, leading to a pernicious loss of blood discs so grave and severe as to be fatal. The main points are: It usually occurs in the last stages of fatty ills: Both voluntary and involuntary muscles are involved: The parent cells in the blood-glands are degenerated: Blood is not organized in normal quantities: Patients grow bloodless and weakened. The treatment should be that of the fatty ills.

After more than thirty years of consideration, puerperal convulsions seem to me to be due to an acute fatty degeneration of the kidneys, placenta, etc. I am well aware that others do not entertain this view, but how can one read the signs and symptoms otherwise? Let me relate a case:

In 1880 a young wife was pregnant with her first child. At her marriage I met her; she was then thin, slim, apparently well. I saw little of her before she was far advanced in pregnancy, when her appearance was so changed that I hardly knew her; a lady very stout, obese, and bloated, with eyelids œdematous and face waxy. She made little complaint. She had lived a life of no work, eating all the "good things" she could find, boarding with her mother and having an easy time. The urine contained plenty of hyaline and fatty cylinders from the kidney-tubules, abundant fatty and deformed epithelia, and was two-thirds in bulk albuminous. I gave her simple remedies and arranged for summons when her labor should begin. It happened that night. She got through well. The babe weighed three and one-half pounds. The placenta was one-third degenerated into what appeared to be ovoid and obovoid masses, possibly syphilitic or cancerous even. I had not met with such appearances before, nor have I since. The clinical morphology of the placenta showed the whitish hard masses to be made up of plates of cholesterine, as a rule longitudinally parallel with the long axis of the placental tufts. When the babe was one day old, and the mother doing well, a steam fire-engine, for practise, was attached to a hydrant in front of the house where she was and set going in spite of the protestations of those concerned in the care of this patient. The shrill sound of the whistle blown in defiance sent her into convulsions, which lasted eighteen hours, consciousness not returning until two days later. She was treated by ether anæsthesia, calomel and jalap purging, and beef essence *ad libitum*, combined with very careful watching and nursing. In less than one week the albumen and the casts disappeared, and she gradually convalesced into a good recovery, though the

left side of the face was paralyzed for some months afterwards. At the present time there is a slight facial paralysis. Otherwise she has developed into a woman of splendid capacities and mental abilities.

To show that Bright's disease of the kidneys has convulsions as a symptom I can refer to a case of a man who also came near dying in like convulsions, but survived some months without convulsions on the diet which is employed to arrest fatty degeneration. No doubt there was uræmic poisoning in these cases; still the essence of the disease was the fatty degeneration, as manifested by the physical exploration. How can the kidneys properly eliminate urea when they are choked and impeded by fatty metabolism?

If motherhood would feed on two-thirds animal and one-third vegetable food by bulk I think there would never be any puerperal convulsions from fatty degeneration. This is said advisedly, as in the case alluded to two other children were born afterward to the same mother living on this diet; no puerperal fatty ills complicated these second and third labors.

Those who saw the frozen sections of pregnant women's trunks, and witnessed the enormous abdominal distention and the great displacements of the thoracic and ventral viscera, at Berlin Medical Congress in 1890, cannot but believe that the circulations are hampered and impeded. Thus is furnished one of the great prerequisites for fatty degeneration. The wonder is it does not occur oftener, when so many women live to eat, not eat to live.

The case cited had insufficient exercise, which it will be remembered is enough to spoil even horses in a few months by the degeneration in question.

Albuminuric retinitis is a form of fatty degeneration. Lately I was shocked to learn from a most eminent American maker of telescopes that his wife, whom I had met apparently well a year or two previous, had died of Bright's disease of the kidneys. This was undiscovered until just before death, though her medical attendants (he said) had repeatedly examined the urine and found no albumen.—I wonder if they looked for fatty epithelia or cylinders. The detection was made by the ophthalmoscopist. Here is a lesson for the profession! For this want of diagnosis the bereaved husband was so bitter on medical men that I thought he meant me in particular; so I furnished him with evidence such as I am giving here to show that the medical profession was not at the low level he claimed. I did not assert that other medical men knew less than myself, but I did insist that some medical men knew how to detect and treat the disease in question, and that I would not calmly submit to his unsustained assertions. In evidence let me quote from the *Medical Times and Register*,* as to retinitis being a fatty degeneration:

Œdema of the lower eyelid; the upper has a less lax histological structure,—a very characteristic symptom of Bright's disease:

Dim vision with fading and receding pupil from iris muscles being weak:

---

* February 24th, 1894.

Pupils dilated from weak iris muscles:

Michael says that cataract and albuminuria are simultaneous results in the eyes and kidneys from the same general cause—arterio-sclerosis.*

Doctor L. Webster Fox says: "We have the forerunner of non-albuminous Bright's disease in retinal hæmorrhage; there is sclerosis of blood-vessels as shown by whiteness:" Also says, "The capillaries are involved in like changes: Signs of albuminuria retinitis; optic nerve swollen, vascular walls about blood-vessels more or less white."

Forster thinks the disease is due to alteration of the blood which causes degeneration (fatty) on the blood-vessels' walls.† Charles Theodore, Duke of Bavaria, found hyaline (fatty) degeneration and endoarteritis in retinal arteries. The middle and internal coats are thickened, and the caliber lessened (*i.e.*, circulation impeded); small fatty granulations sometimes filled the small arteries.

Fibers of Miller late in disease show traces of fatty degeneration, and are full of granulation or small drops of fat.

From what has been said it can be readily seen that rupture of muscle is a masquerade of fatty metabolism. Fat may replace muscular fiber from high feeding without due exercise; from ligatures about said muscles; from the circulation being impeded by the gases of fermentation in the alimentary canal. It is easy to see how such weakened muscles may rupture from violent efforts; but muscles may rupture while doing life's legitimate normal work,—in other words, muscles may be so weakened in substance as to tear themselves apart in normal efforts. It is easy to see how powerful muscular force ruptures the muscles themselves, even when they are not

---

*I add, which is due to food.—E. C.

†Wrong.—E. C.

fattily degenerated, as in the case of our Saviour at his crucifixion. He was in perfect health, yet medical men who have critically studied the immediate cause of his death are well satisfied that his heart was literally ruptured by anguish. Christ's death being so much earlier than ordinary in crucifixion caused Pilate to wonder why he died so soon.

Rupture of uterus might come under rupture of muscles, but as it constitutes one of the gravest accidents of obstetrics it deserves a separate mention. The following were the prominent features in a case of mine:

Irish woman aged 28 years; pelvis contracted; previous labor, one, terminated after several days by Doctor Benjamin Cutter by embryulcia. In 1860, July 7th, 9 P.M., I found her with strong pains; os fully dilated; occiput to the right acetabulum; head in superior strait whose antero-posterior diameter was about three inches. For several hours the labor was severe; no headway. Forceps refused at first; but just as they were about to be resorted to she urged manual help. Passing hand still further, to my horror I found a free and open space in which were felt folds of the peritoneal surfaces, the wedge shape of the liver, the feet and hands of the child, the placenta, etc. The uterus was firmly contracted and lying to one side. It was the first time my hand was ever inside the abdominal cavity of a living human being!

Things were so critical that I at once turned and delivered by the feet. I asked for assistance, but the patient and friends insisted on my carrying the case through alone.

After delivery the patient had a pinched face and Hippocratic countenance; no pulse in wrists; extremities cold; sighing respiration; great distress in abdomen. Was constantly begging and entreating to be allowed to sit up. Great restlessness, constant vomitting, and intense thirst. Freely gave tincture of capsicum, ergot, Hoffman's anodyne, gin, and tincture of opium. From these some impression was made on the pulse and symptoms. Abdomen very tender to the touch and very painful to patient. Death followed twenty-nine hours after delivery. The rupture involved the lower part of the uterus and the upper part of the vagina, posteriorly.

Fortunately, this condition is exceedingly rare; the case is here given as a necessary clinical contribution.

If I could control the diet of obstetrical cases, it would be two-thirds animal and one-third vegetable food by bulk. While I know that this plan gives fine normal developments in the epithelial cells of the mammary gland, I feel quite sure that it would prevent abnormal fatty degeneration. To show that this question occupies the thought of obstetricians I quote from the *University Medical Magazine*:*

Regarding fatty degeneration of the uterus during pregnancy L. M. Bossi† found this in active process in three human uteri, one removed at the eighth month of pregnancy and the other two at term. He inquires whether this is the physiological condition, and if so whether it may not explain the

---

* March, 1897.

† *Annali di Obstetrica e Gynecologica*, December, 1896.

wonderful rapidity with which involution of the uterus after labor normally takes place. It may be asked further whether in this fatty degeneration there exists an explanation of some cases of inertia uteri in labor. Bossi has attempted to investigate the subject by the experiments on animals of tying the uterine blood-vessels, but does not regard the results as applicable to the human uterus.

I suppose most clinicians agree that scarlet fever without the stigmata of fatty degeneration is shorn of many of its perils. The signs of fatty metabolism and scarlet fever simply tally. Both may have albumen, fatty epithelia, and cylinders in urine, and dropsy in all forms; also diseased epithelia in urine, which have much to do with the cause of fever. I once saw a case where severe scarlatina occurred at the age of six years, but who died at the age of thirty-two, with extensive fatty metabolism in heart, kidneys, liver, and brain, as the autopsy showed; besides, three years before death she had puerperal convulsions under my father's care. Professor D. Humphreys Storer, of Boston, saw her in consultation; he then taught that these convulsions were due to fat metabolism, and certainly she had all the signs of it. She recovered. A year and a half later she had facial paralysis on the left side. Finally her death came from a second hæmorrhage into the same ventricle, for I found it completely filled with a fresh clot of blood. I also found the fibrous remains of the first causal effusion inside the left lateral ventricle of the brain. The kidneys had the development of a child of six years. She never was well after this fever, and would probably have not lived to

maturity had she not persistently kept out of doors during the day.

The work of the kidneys is vicarious with the skin, and when invaded by scarlatina the result is these organs are overwhelmed, their functions rendered languid or impeded, hence fatty transformation. Surely the rashes of scarlet fever demonstrate that the skin is congested, its capillaries dilated, and its circulation impeded; and as the skin is the largest gland in the body, with twenty-five miles of sweat ducts, this dermal retardation and impeding must be an element in fatty degeneration when it occurs in this malady.

Sclerosis is a term employed when the degeneration is of a denser substance than the tissues it replaces; its nature is twofold, fatty and fibrous. Regarding the former—as has been said before—when cholesterine replaces tissue it is apt to be accompanied by lime deposits which give the artery affected a feel like stone; of course fatty degeneration must follow, even if it has not preceded such sclerosis. The mere obstruction to the circulation, for example, caused by the cholesterine is a sufficient cause. Fibrous thickening or abnormal increase of white or curling fibrous tissue form another kind of sclerosis. This tissue is laid down in a weakened condition and possesses the first elemental cause of fatty degeneration, *i.e.*, retardation and impeding of function; the microscope alone can make out surely the diagnosis of fat-ill sclerosis. Fibrous sclerosis is especially a food disease, and has been found amenable to diet.

I have seen fatty degeneration accompany

cancer of the schirrhous variety; my definition of cancer is "tissue under mob law." Mob law defies all rules, and it is not surprising that cancer should include fatty degenerations specially, as in no other organic disease is there more retardation or impediment to the functions than in the conditions called cancer. I have now a case of schirrhus of the left breast, where the urine and the blood show fatty degeneration. Physicians should look out for this complication in all cases of cancer and sclerosis. It is evident that when the systemic condition is one of fatty degeneration the tissues under mob law and sclerosis will more readily riot. The aim should be to get rid of the fat ill first. When shall we have a better name than "cancer?"

Senile gangrene occurs when an embolus blocks an aged artery roughened by degeneration. It impedes the circulation and in fact produces the very prime causes of fatty degeneration, which degeneration must also have come from the atrophy and wasting induced by the loss of the full normal blood-supply; sometimes the artery feels like a tube of stone or bone. Fatty ills are normal in old age as aforesaid. Senile gangrene sometimes appears like adipocere, a fatty degeneration occurring after death, and thought by some to be due to chemical changes away from the atmosphere. Good authority reports that meat kept under water sufficiently long will change to adipocere.

A friend who had this disease was a rabid follower of the doctrine that "like cures like," and I could not get him to try the food treatment. One leg was amputated; also the

other, I think, afterwards. He died. This was doing something contrary to his faith. Such surgery was done years before the Christian era. It is much easier to use knife and saw on a patient than to make him use knife and fork on food that he does not like. It is a good plan for the aged to drink much water, preferably hot, in order to keep the systemic salts in solution, and to have all the circulations clear and free as possible.

Shaking palsy, Basedow's disease, paralysis agitans, tremor, are varieties of paralysis, slow acting, usually senile, and dependent mostly on fatty ills; probably some sclerosis occurs with them. As aforesaid, fatty and fibroid degenerations are often associated together. The nerve centers of the brain are affected by the degeneration which interferes and cuts off supplies of initial ganglionic nerve force.

M. Liegeois, in the *Journal des Praticiens*,* states he has observed a permanent trembling of the hands in a woman who suffered from aortic insufficiency with visible capillary pulsation. Certainly there was impeded function here. It is interesting also to note that M. Liegeois advises for senile shaking of the limbs, accompanied by a transverse or vertical tossing of the head, an "analeptic restorative diet, river bathing, and infusion of *Chenopodium ambrosioides* (Mexican or Spanish tea)."

This comes very close to the treatment by hot water (which is better than tea generally), by baths, and by feeding for shaking palsy.

---

*Paris, August, 1896.

M. Liegeois deems polyneuritis to be the cause, but is not thickening of the nerve sheaths a part of polyneuritis?

Shock may also be a fatty masquerade. An item in a newspaper under date of March 19th, 1894, says:

> Commodore W. I. Whitney died in New York at the age of seventy-one. Two months ago he was knocked down by a cab in Broadway and fractured his hip. The bone united, but the shock from the injury brought on paralysis and also developed Bright's disease. In 1887 he resigned active service on account of failing health and almost total blindness.

The history of this case reveals fatty ills for thirteen years. While it is true that the "shock" could have accelerated the paralysis and Bright's disease, still the causal lesion is all concealed in the unusually clear medical report as to this distinguished public man. The repair of the hip is very interesting as showing what Nature can do under unfavorable circumstances. In my experience this is more than paralleled in the case of a lady sixty years of age. The bone united well, but she died a few months after of a cancer of the liver as shown by the autopsy, which must have existed for a long time before, as evidenced by a peculiar bronze, ashy countenance, and by the death of a married sister a few years previous of cancer of the brain.

The death of Doctor B. S. Codman of the surgical instrument firm of Codman & Shurtleff, Boston, was said to be due to a fall—"the shock causing Bright's disease and pericarditis." As he was seventy-two years of age it is more than probable that this fatty degeneration was caused before the shock—

in other words, the gun was loaded before the trigger was pulled.

Smallpox is often associated with fatty degeneration. When the natural history of this disease is considered it is, in the light of the principles laid down here, a sufficient cause for this disastrous fellowship. No matter which is the masquerade, the fatty ill needs treatment because this partnership may be the chief cause of the mortality. The weakened tissues are just so much a depressant of the vital forces as they are in proportion great or small. But what shall be said when the subject of smallpox is already invaded by fatty metabolism when attacked? The popular answer would be "the patient died because he or she had no constitution to resist." And this would be objectively and theoretically correct,—a system half fat would be phenomenally weak to resist any disease. Death would have more dominion over such cases of variola than where there was no such complication. Some go further and affirm that smallpox would not occur in a perfectly healthy person; there is good evidence for such a view. Is it wise to eat so that fatty degeneration may make patients an easy prey to smallpox?

Softening of the brain is a term often heard, but I have yet to meet any who actually have seen this condition described save in symptoms. It must be admitted, however, that such softening does exist, and from what has been said it must likewise be inferred that it is more likely to be due to fat metamorphoses than to anything else. The brain substance resembles fat; lecithin, one of the fat acids of

butter, is found in normal brains; hence it must be an easy transition from normal cerebral substance to abnormal fat. Indeed, a normal brain is not so dense as tallow or lard at a temperature of 40°. In some cases of softening of the brain I have read of there was an oily degeneration, and for these reasons I think it just to place this here as a masquerade.

Syphilis may be a masquerade, and M. Liegeois mentions this disease as a cause of tremor.

Doctor Henry A. Robbins in a letter to the writer under date of June 12th, 1896, says:

"Its (syphilis') favorite masquerades are "fatty degenerations in all the vital organs, "and the symptoms are exactly the same as "you have beautifully described under 'Fat-"ty Ill Masquerades.'

"In the post-mortem of a boy that died "of hereditary syphilis was discovered un-"doubted fatty degeneration. I called it "'ramollissement' and 'extensive soften-"ing.' In 1874 Professor Heubner showed "that syphilis produced opacity, thickening, "and diminished caliber of the cerebral ar-"teries, interfering with circulation; throm-"bosis and cerebral softening. Doctor C. "L. Dana, of New York, at the American "Neurological Association, 1894, said: "'Taking hemiplegia as a whole I find "syphilis in thirty-six of one hundred cases. "Syphilis causes one-third of all cases of "apoplexy.' Doctor Heck showed, at a "meeting of the Medical Club at Vienna, "a babe, the second child of a syphilitic "mother, who when eight weeks old showed "a syphilitic erythema which disappeared "under the influence of iodide of mercury. "Later the extremities began to swell and "the urine showed albumen, hyaline casts,

"white and red corpuscles; it was cured by "potassium iodide.

"Dr. L. P. Yandell reported (1878) in the "*Maryland Medical Journal* a case of syph- "ilitic albuminuria: 'German, male, sixty "'years old, with general dropsy, albumen, "'casts, and renal débris in urine, pale waxy "'skin, puffy eyelids, constant indigestion, "'pain in back, disturbed vision, hemicra- "'nia, muscular debility, frequent micturi- "'tion. He was given one scruple of iodide "'of potassium in skimmed milk or water "'every three hours while awake. Dose "'increased ten grains daily with no bad "'symptoms nor discomfort. Iron and bit- "'ter tonics were given at the same time. "'Marked improvement at the end of a few "'days. Throat rapidly healed. Strength, "'appetite, and color returned. The urine "'ceased to evince any sign of renal disease. "'In two months he was well.'"

Dr. Robbins says: "Syphilis gives rise to the train of symptoms identical with those of fatty degenerations."

There is no room for more evidence. If it is true, as has been stated in court, that sixty per cent. of the human race are tainted with syphilis, it is clear that it may masquerade fatty degenerations. Certainly it furnishes one of the great primal causes of these ills —*i.e.*, retardation and impediment of function.

For over twenty-five years the writer has found the detection in the blood of the automobile spores of the *Crypta syphilitica* to be the best test for syphilis. It is used without disturbing the patient, and is useful to decide when

the case is fully cured. No case is cured if the spores of the *C. syphilitica* are present.

Since surgeons have found the Gasserian ganglia invaded by fatty degeneration it is probable that some of the cases of facial neuralgia, or *tic douloureux*, are due to this cause; this is more evident when is considered the fact that angina pectoris is due to the same cause. Indeed, until there is a better clew to its real nature we had better hold on to this than be tossed about by the winds of clinical uncertainty and wavering doubt. The treatment for this degeneration is all in the line of good health for every tissue. Pain is usually due to partial paralysis; strike with a whip, and you hurt because the nerves struck are partially paralyzed; strike with an iron bar and you can paralyze the nerves so that they give no impression of pain,—a wholly lacerated nerve gives no pain. Hence in tic douloureux the interstitial and peripheral nerve changes may partially paralyze the sensory fibers and pain result; indeed, extirpation is a last resort, to be tried when all other means fail; it is effectual simply by the destruction of the nerve which suffers or makes to suffer. Better try to produce normal nutrition, so that the nerve makes no trouble because it has naught to complain of.

I believe in the autonomy of nerves as well as of organs, and that a good deal of what is called hyperæsthesia and neuralgia is simply the outcry of the diseased suffering part for relief.

A recent* autopsy of a tuberculous case

---

*November, 1896.

resulted in finding considerable sized masses of hard fat, granular fat bodies, and free oil in the diseased lung along with the tuberculous matter, which impels me to suggest these were simply masquerades. Certainly there is impeded and retarded function in a lung infiltrated with tubercles, which impediment is causal of fatty metabolism. The Micrographic Dictionary is quite clear on this point:

Tubercle appears to originate most frequently from the tissue which surrounds the small arteries in every situation, constituting the lymphatic sheaths. The small cells multiply at separate centers and thus miliary nodules are produced around the vessel; and as they gradually develop they compress the vessel, and may finally occlude it. Tubercle invariably undergoes a retrogressive change; this commences in the center of the granulations, and consists in the atrophy and incomplete fatty metamorphosis of the closely crowded cellular elements, constituting what is termed caseation. The translucent and gray granulations thus become opaque and yellowish, the yellow tubercle being merely a stage of the granulation. The caseous tubercle subsequently softens, or may gradually dry up into a firm cheesy mass, which ultimately becomes calcified.*

So here fatty and tuberculous degeneration are intimately connected pathologically. Dietetically they are also connected, as carbohydrates in excess are causal of both tubercle and fat ills.

The laborious, careful, accurate, and extensive contributions of the late Doctor Joseph Jones, of New Orleans, as to the natural history of yellow fever impress one with the

* Page 785, Edition 1883.

idea that fatty degeneration is a great clinical element of the debility, pain, prostration, and danger therein. Fattily degenerated tissues are physiologically and physically weak; indeed, they are a pathological element of great power to destroy life, for the said tissues are already half dead. Be it that the vegetation (Freire's) is a physical cause of the fatty metabolism, still it is the duty of the clinician to remove the abnormal fat transformation by aiding Nature. It is a hard enough situation to have a noxious vegetation to fight in addition to debilitated tissues, hence the close relation of dietetics to yellow fever.

IV.

FATTY DEGENERATION A PRESERVATIVE PROCESS.

We find such to be in the living as well as the dead. For example, the arterial muscles, the eyes, and the kidneys last longer because of this ill than otherwise they would have done under the retarded and impeded function to which they have been subjected. In this view it is not a wonder that deaths result from fatty ills. To state this differently, the idea is that from the partial paralysis and from the impeded or retarded circulation or other function of a part the tissues are prevented from at once dissolving entirely away, by the infiltration and substitution of fat in its various forms, especially where the diathesis is gravelly and where there are calcareous deposits. Thus time is given for repentance and repair, which, if taken advantage of by the use of food which does not paralyze by its gases evolved through fermentation, Nature will then metabolize normal tissues in place of the abnormal.

The idea is in line with what happens when the body systemic gets into other troubles. If the body is burned pain follows, which calls attention to the injury. Vomiting is another function that is sometimes curative; even dogs know enough to eat grass as an emetic when they have devoured bad food. Diarrhœa is sometimes curative. Indeed, it may be said in general terms that most of our diseases in their early stages are Nature's warnings or appeals for our stopping physiological sinning.

V.

THE DIAGNOSIS OF FATTY DEGENERATION.

The clinical morphologist, while not ignoring at all the work of the post-mortem detective,* is obliged to use skill before death, since his business is the practical diagnosis and treatment of sick persons, and it is of deepest interest to find out fatty degeneration before death, and it is of the deepest interest to cure fatty degeneration.

Coming in contact with a fatty masquerade, or with a case in the pre-stages in which cases are easy to treat and hence more needful to discover them, the first business is to ascertain whether there is liquid fat from beneath the skin in a blood specimen. To do this use a clinical or other microscope with one-inch ocular, a one-fourth or one-sixth inch objective, a slide, cover, and needle or scarificator—Cutter's, if you like.

Never take the finger for collecting blood; take the bared wrist, previously cleaned with soap and water if need be, in the left hand in such a way that the radial edge is uppermost and the skin made tense by the fingers and thumb of the hand. Then with needle or scarificator make a puncture. If the blood does not exude readily, as is likely to be the case when the circulation is weak, slow, impeded,

* "The discovery of the fatty degeneralion of tis-
"sues is probably one of the most valuable fruits of
"microscopic research in regard to medical science;
"for it has shown to us that maladies, supposed for-
"merly to rise from too great abundance of the circula-
"tory fluids, have really had their origin in a decayed
"state of the tubes and vessels in which the fluid was
"contained, and that the natural process of human
"decay, as it called, is a morbid process of disease,
"probably to a certain extent as remediable or pre-
"ventable as many other diseases to which man is
"liable" (*Micrographic Dictionary*, 1873).

and languid, squeeze the wrist hard. Sometimes a deeper puncture is needed. When a drop of the size of a common pin-head appears, touch the center of the slide to the drop, or remove with a knife, and, immediately covering, put on the stage of the microscope. If it is a case of fatty degeneration there will be observed in the field oil in globules and protoplasmic forms, varying from granules to sizes that fill almost the whole field. The idea is that in thus examining healthy blood there should be no fat in the field in the form of oil or liquid fat. To be sure, the fat comes from beneath the skin; but normal fat should be hard, more like a stearine candle. The margaric acid should be solid, embraced in the delicate walls of the fat cells under the skin. The globules should appear like little grapes in clusters quite uniform in size.

Regarding fat acids in man: It is an interesting subject to study whether the normal stearic, margaric, and palmitic acids, which are solid or semi-solid in the healthy human body, change their atomic composition by becoming oleic acid in fatty degeneration. The formulas are as follows: Oleic acid, $C_{18}H_{34}O_2$; stearic acid, $C_{18}H_{38}O_2$; margaric acid, $C_{17}H_{34}O_2$; palmitic acid, $C_{16}H_{32}O_2$. If, then, what we have been taught about oils is true, the fatty change is when margaric acid becomes oleic acid and adds one equivalent of C, while two equivalents of H are removed from stearic to make oleic. The change to oleic acid adds two equivalents of C to palmitic acid.

But what is this for protoplasm to do, when

protoplasm makes the very complex substances, milk, bile, sweat, mucus, gastric juice, to name no more, from mammalian blood? Truly, as the Psalmist says, "We are fearfully and wonderfully made!" Has man ever made anything equal to the commonest epithelial cell? Incidentally remarking this to one of the greatest organic chemists in the world, he mentioned his surprise at the fact here stated; but he would not express an opinion, as he did not know all the literature of the subject. I wish all we physicians were as wise in the expression of sentiments when any new thing is brought to our notice.

Regarding fat in the white blood-corpuscles: This means of diagnosis has been used for many years in America, as a sign of impending or pending apoplexy; but the fat globules are very small and liable to be mistaken for entophytal growths of syphilis, eczema, chyme, etc., and may also be present along with the leucocytal fat. But fat in blood after meals is usually more outside than inside the leucocytes, which are unapt to absorb the post-prandial fat.

If fat in the white blood-corpuscles is found in conjunction with fat acids, one may be quite sure of the situation as one which, if not fully characteristic of fatty ills and their masquerades, marks the fact that they are coming on, and hence, as said before, the time to repent, reform, and repair has clinically come.

Usually there are but one or two minute globules of fat in one leucocyte, and situated away from the periphery. Sometimes they bud from the periphery. Their minuteness

is no bar to their significance nor their detection. In very marked cases fat granules are found in all white corpuscles; in less marked in only a few.

Thrombi and emboli of fat are sometimes macroscopic or visible to the naked eye, and they also are diagnostic of fatty ills.

It is a good plan to study milk, oil, melted butter for fat appearances so as to be familiar with the foregoing.

Morphology of muscular fibers: In suspected cases cut through the skin and with a barb tease out (from the deltoid muscle, for example) a portion of the fiber; this will give at once a decided test of fatty degeneration under the microscope. If such degeneration is present, granules and globules of oil will be seen invading and replacing the fibrillæ; but if the degeneration has gone thus far it should show signs of its presence in the blood and urine, rendering this process needless.

Pigment matters: "Along with fatty deposits go amorphous finely granular protein matters and occasionally pigmentary degeneration in the form of brown, bronze, yellow, red, black, aniline-blue and emerald-green bodies, together with amorphous or crystalline calcareous salts, as the carbonate of lime (calcareous degeneration)."* When these pigments are found in the blood, sputum, or urine, they must be regarded as in some degree indicating the presence of fatty degeneration somewhere in the body; they also indicate impeded portal circulation. The

---

* Micrographic Dictionary.

beauty of these pigments sometimes is great, and such exhibitions increase admiration for the human body as "a temple of the living God," which even in ruins is "beautiful within." These pigments in the circulation have been connected with rheumatism, which is "a gravel of the blood." They are probably excrementitious substances that the system would throw off if the normal functions of its morphological elements were not in a languid or interrupted condition. They are found in the pre-stages of disease, where the health is apparently good; are brilliant signs that trouble is brewing; and liberal doses of water are indicated.

Morphology and chemistry of the urine: In dubious cases study this daily for weeks if not months.

The writer forty-three years ago studied this morphology under Professor Josiah P. Cooke, LL.D., at Harvard Medical School, and ever since, and perhaps it may be allowed him to express surprise that: So few physicians pay close attention to the clinical morphology of the urine: That so many physicians get an apothecary or young medical student to examine urine for them: That they do not know how much they lose by these courses, and: That they will so carefully look after the one rill of the temperature of the sick, but neglect the small ocean (urine) of physical signs, which gives far better indications of the real condition of the patient. Both the temperature and the morphology should be used. Conventionalism aside, I know that the good intended by these presents will be defeated if the

morphology and chemistry of the urine are ignored. I speak from experience when I say that but for my own daily personal study of urine I could not have presented these facts, nor have tried to inspire others with the hope that they will cure fatty ills.

Regarding albumen, in greater or lesser degree: Doctor Stewart* says: "Albumen is not present in some cases of Bright's disease." I think, however, had he systematically examined such urine voided in the morning before eating, daily for weeks or months, albumen would have been found; but I do not affirm this of a certainty, not having seen his cases. Albumen should show by heat, nitric acid, picric acid. Albumen may be present without fatty degeneration or interstitial nephritis; cylinders are also found without albumen. Albumen in the urine may come from uterine reflex, from kidney or uterine congestion, from irritating drugs, from turpentine inhalation; but whenever it occurs alone, although it may not be diagnostic of degeneration, it certainly is a significant indication of something wrong. So long as remedial means will remove it duty demands to do so and not to let albumen run on to waste. Again, the source of this albumen is the blood. It exosmoses from the Malpighian bodies and epithelia of the kidney tubules, whose complicated and knotted structure renders a retarded or impeded circulation possible and easy; hence the favorite location of fatty ills, as well as the

---

**Journal of the American Medical Association*, December, 1893.

frequency of the occurrence of these ills, in such never idle organs.

Fatty epithelia in the urine: Epithelia are the chief autonomic agents of the production of urine; why they secrete urine is not apparent from their physical appearances. The protoplasm which does their work is not to be visibly distinguished from the protoplasm of other epithelia, which secrete wax in the ear, milk in the breast, or juices in the alimentary canal; each has its own life-work; they die, are thrown off, and washed away in the secretions; are described as pavement, cylindrical, and fusiform; are not very perishable, and retain their characters for a long time,—there is hardly any natural potable hydrant water but contains epithelia; they survive soaking, like hair, hoof, and nails, which are modified forms of epithelia.

Epithelia of the fattily degenerated kidney become subject to an internal deposit of fat in globules of varying sizes and numbers, sometimes of awry protoplasmic shapes, which form conspicuous objects under the microscope. Focusing off and on, the play of color and shade will be found diagnostic. Where fatty epithelia are present alone—*i.e.*, without albumen and cylinders—in a suspected specimen of urine, I have seen them disappear very rapidly and not return after the treatment has been suspended. When present they show as well as any physical sign that fatty degeneration is somewhere in the body, provided that fatty food has not been eaten in excess, and vaginal epithelia that have imbibed vaseline or some other fat are not mistaken for nephritic epithelia. Not all

the epithelia in the same specimen of urine are fatty; two or three individuals suffice as witnesses.

It should be remembered that epithelia are sometimes invaded by urinary salts, uric acid, oxalate of lime, carbonate of lime, urate of soda, triple phosphates, cystine, and so forth. When saline bodies are rapidly deposited in granular form they might be mistaken for fat; but the presence of these salts in the urine, and their different refraction of light, will help to make the correction. The subject of intracellular salts is beautifully illustrated in the parenchymatous cells of a common grape skin, where crystals of cream of tartar occur in large bundles of needles.

Casts of kidney tubes: These are best detected by a one-inch objective and ocular; it is well to have a large and uncovered cell 1½ inches long, ¾ inch wide, ⅛ inch deep. This may be made by cutting a parallelogram of sheet lead ⅛x3x1 inch, soldering same to common glass slide, by heating the slide, so that it will melt sealing-wax, on to its upper surface; the slide should then cool. The perforated lead plate is next heated hot enough to melt the sealing-wax into which it is embedded, and when cool is ready for use. If the steps have been properly taken a good job will result, because the principle of soldering is to heat the substance to be soldered up to the melting point of the solder, and not to apply the melted solder to colder surfaces that chill and will not coalesce with the solder. The advantages of this open cell are more celerity and larger field of observation than when a cover-glass is used; besides I

have found that the cylinders will most readily escape from beneath the glass cover when the excess of fluid is removed by some bibulant, so that the cover-glass will not slide off when used on the conventional stage.

The urine collected before rising from bed in the morning should be allowed to stand a few hours, preferably in a conical vessel (wine-glass) or in a common bottle—specially where the suspect contains but few casts, and when it is clinically important to detect the pre-stages of the disease. This gives time to settle to the bottom, whence the pipette readily reaches and transfers to the slide, which must be placed on a horizontal stage, else the specimen will escape.—Those who prefer the conventional microscope can use the horizontal stage by placing the microscope upon a chair of the same height as that on which the observer sits; if the chair is not high enough, the microscope can be put on the microscope box or some other support; or one may use the J. Lawrence Smith chemical microscope, where the stage is above the objective; or the clinical stand may be used, mounted on a horizontal bar of wood a foot long and two inches square, provided with legs six inches long, and in the center a hole bored vertically, in which the tube of the stand fits tightly, but capable of movement. For forty-three years I have used an Amici stand, which gives a horizontal stage. There is no good reason why this Italian stage should not be conventional today. Folks follow fashions in microscopes as the ladies do in dress. I insist on the low power; the one-inch will detect cylinders

after the one-quarter-inch objective has failed, because of the great transparency and shadowyness of the casts.—The ocean looks blue, but a tumblerful of sea water shows no blue color; thus low powers excel the higher sometimes.

The casts are cylinders like candles run in a mold. In the fatty degeneration of the nephritic tissues the fibrin and albumen of the blood come away so freely as to form molds, castings or "casts," or cylinders in the kidney tubules; afterwards they shrink, are washed away by the urine secreted, and to be detected as above described.

From a clinical standpoint the kind of cast practically makes little difference, as all are forms of fatty degeneration, subjects of the same causes and amenable to the same treatment. If causes cease, Nature, furnished with good organized and organizable food, will end the casts, no matter whether hyaline, fatty, epithelial, waxy, etc.; the main thing is to restore the impeded or retarded functions.

Pseudo casts are also encountered in urine, and clinicians should know them: For example: Those which are more like carrots than the true straight broken-off casts: Those which sometimes have appended a long filament, usually coiled like a spiral spring. These false casts are thought to come from some of the many reentrant glands that open into the urethra, and from the spermatic ducts of the male urethra; they often occur along with the true casts, are abnormal, and usually disappear under the same treatment that carries off the true casts.

Amyloid bodies are substances composed of nitrogenous matter closely allied to albu-

men; are colored deep reddish-brown by iodine; occur in tissues and organs affected with waxy or lardaceous degeneration, as the small arteries, the liver, the kidneys, the spleen, the breasts. Though amyloid is considered by some as normal with brain substance, in my own opinion such is the first formed substance in fatty degeneration—in other words, amyloid is the first evidence of fatty degeneration of the kidneys when found in the urine, and it is the last to leave when the ill is recovered from. The physical appearances of amyloid bodies are like starch —hence the name, starch; they vary in size like wheat starch, and each has a hilus sometimes. No doubt common starch, accidentally present, has been mistaken for amyloid; hence it is important for clinical purposes that all vessels holding urine should be clean.

In doubtful cases the clinical morphologist should know whether there is no admixture of starch from the outside; this is the more needful because rarely is the morphology of the air examined without finding starch present. Voiding the urine into a clean vessel, and collecting the sample with a clean pipette, is generally sufficient. Another source of error is that sometimes the globar mother mucous cells found in the urine are distended by a glassy nacreous hyaline substance, which indeed may be amyloid, and has been found in the blood. Three hundred diameters is the best power to use for its detection.

Vegetable amyloid may be studied in the haricot bean and in the rhizome of sarsaparilla; it is regarded as a transition substance between starch and cellulose or woody fiber.

Free oil in urine is a somewhat startling sign of fatty ills, indicating that the tissues are so much broken down and in so advanced a stage of degeneration as to be changed into liquid fat or oleic acid; hence it is doubly important to eliminate all sources of error, and to avoid wrong conclusions.

Sometimes the vial in which the urine is sent for examination has been used for oil, though the patient may assert it was "washed clean." It is a fact that when oil of any non-volatile nature has been in a bottle for some time no ordinary washing will cleanse it; thus old castor-oil vials used for urine have bothered me much. Before coming to any conclusion as to the significance of liquid fat in the urine, it is best to be sure it is not foreign. Where it can be done the patient had best void the urine into vessels of known cleanness. I have known a pipette, previously used for oil, to nearly become a source of error.—It is surprising how much cleansing such a pipette needs; oil clings and is capable of the minutest subdivision. A late paper read before the Royal Institution, London, on "Foam," states that films of oil have been measured less in thickness than the one-millionth of an inch! The persistent fragrance of ointment found interred with mummies for three thousand years is another example of the minute subdivisibility of matter and its persistence. As oil is of less specific gravity than urine it floats to the top, but this is not always so, for I have found it at the bottom, though I cannot explain this.

Urinary catarrh may be mentioned as an-

other source of error, for in conducting daily urinary examinations it has been found that one day albumen, fatty epithelia, kidney casts, one or all, would be present, while on the next albumen, casts, and fatty epithelia would be absent; that protoplasmic, filamentous, or Indian club catarrh (colloid) would be present; that on a third or later day albumen or casts or fatty epithelia would be present, and perhaps the day following only the colloid; that on a succeeding day the urine would be normal; that afterwards the albumen, casts, and fatty epithelia would again be present.

This experience of varying conditions has been common with me for ten years and more. This shows a kinship or relationship between these catarrhs and fatty degeneration, a fact which is very interesting and practically useful. It shows too that probably both fatty degeneration and this catarrh may be dependent on the same cause, to wit, languid or interrupted cell and other organic functions. They both disappear under the same treatment, therefore when these catarrhs are found in the urine it is advisable to look for albumen, casts, and fatty epithelia. There is no doubt but the nervous prostration resulting from the colloid catarrh, superadded to the loss of force occasioned by the albumen, casts, and fatty epithelia, constitute a doubly powerful agent in the production of neurasthenia in all its most aggravated forms,—for example, the so-called cases of heart failure.

In observing urinary catarrh it is a good plan to let the urine stand over night or for

twelve hours before studying; to pipette from the bottom of the fluid; to employ a large cell on the horizontal stage; to use a one-inch objective and ocular; to study at least six successive specimens for six successive days, one each day, before deciding the diagnosis. It is true that urine just voided will generally show this morphology, but most of the subjects of this catarrh are neurasthenic, curiously self-possessed, with the idea that they "know it all;" are usually chronic cases, much disgruntled with the shortcomings of the medical profession, if they do not damn it outright; if one is going to have any hold on them afterwards (as he ought to, to cure them) he must be very careful to let them understand he is not doing any guesswork; indeed, such a slow course is really best for the attendant, because the natural history of the case is thus obtained. Sometimes this rapid shifting of the signs in the urine from normal to abnormal and *vice versa* makes matters unpleasant for the physician. For example, a country practitioner found albumen in the urine, and, as do many examiners, without looking for the casts and fatty epithelia, he diagnosed Bright's disease; next day he sent him to consult with a city expert who found no albumen, and chided his country brother for his ignorance and presumption. Probably both were correct, and it was one of these alternating cases of albuminuria and catarrh! In my opinion they are very commonly met with and masquerade under the names of many formidable diseases.

I may add that urinary catarrh is not conventionally regarded as a significant physical

sign of disease. In justice to myself and others I must aver that I have found urinary catarrh to be the only marked symptom in many cases of neurasthenia, and the cases were cured when the catarrh was removed. I feel justified in placing a clinical importance on this colloid catarrh, and not to let go of the clew it gives to relieve suffering. As to disagreement, it is well known that at the Berlin International Medical Congress, 1890, the most celebrated physicians differed about ether: Doctor Wood was called from Philadelphia, four thousand miles, to tell how to give it, though used successfully for more than fifty years in millions of cases by thousands of professionals! Then how can it be expected that all would think alike on this subject of urinary catarrh, so little known, requiring technical skill to detect and understand, because latent, insidious, changing, and eluding the highest powers of the microscope?

Fatty epithelia can be artificially produced (as by gynæcologists) by placing cacao butter, lard, or vaselin in the vagina, and on the morrow examining the morphology of the discharge. Epithelia imbibe fat by contact, and this should always be remembered when making diagnosis of fatty ills in women. Vaginal epithelia are common in the urine of the female. The same is true of fatty matters applied to the skin; and dermal epithelia are flatter, denser, drier, and more wrinkled than vaginal. Recently I detected oil in the urine of a patient, and found it came from a daily bath of olive oil.

The macroscopic physical signs are open

to the unaided vision; but are not to be depended upon always, at least not until corroborated by the microscopic. A drunkard's nose, carbuncular, enlarged, knobby, greasy, whitish pale, is perhaps the most prominent macroscopic physical sign of fatty degeneration. Other signs are œdema of eyelids, dim vision, dilated pupil, lack of bodily or mental vigor, green ground glass pupil, arcus senilis, weak stridulous voice, insanity, old age, etc.

Fatty degeneration is very common in persons over fifty years of age; and fatally complicates pneumonitis and other diseases because it removes a portion of the power of vital resistance. It is found in society which mainly lives on starches and sugars, because social ethics decide that white flour bread and sugar foods, not to mention confections, are the proper aliments for people to subsist on, for the reason that they are æsthetically beautiful to the eye and palate. So long as people live to eat, and do not eat to live—that is, so long as sugar is advocated, even by chemists (curiously); so long as Count Rumford formerly, and the French people now, regard as good food all that pleases the palate; so long as the chemical, physiological, pathological, histological, kinetic, and thermal aspects of food are practically so completely overlooked and ignored by the ethically æsthetic; just so long will there be an abundance of fatty degeneration everywhere among civilized men. To offset all this may be employed winter and summer migrations on land and sea; physical bodily exercise; bicycling (moderately); fishing and

hunting in the pure open air of desert places; avoidance of carbohydrate liquors; promotion of downward peristalsis; prevention of fermentation in food eaten; proper expulsion of intestinal and stomachic gases; normal mental and moral activity, etc. These alike help to ward off and to mitigate fatty ills which come from allowing the love of the beautiful to determine the selection of foods to the exclusion of other more important selective standards.

The heart's sounds are muffled, softly pronounced, and weak in fatty degeneration; it is as if a thick woolen blanket intervened between the ear and the heart. The normal thrill is of a quality like that of the deltoid muscle in action, but in fatty ills this is not transmitted to the tympanum, simply because the fatty interstitial fibrillæ dampen the sounds by their non-conductivity,—the fatty fibrillæ act like the felt dampers of the pianoforte, and they substitute the number of fibrillæ able to contract and give forth sound. As the diseased fibrillæ are replaced by normal fibrillæ, so the loudness, clearness, and penetration of the heart sounds increase, giving various grades of intensity from almost inaudibility.*

* Thus auscultation becomes a kind of measure wherewith to gauge the improvement, and on the other hand a gauge of the devolution or retrogradation of the case. Some may demand that this be proved by an autopsy, and so it might if we were veterinarians, who slaughter their bovine patients to see if they are diseased, and sometimes find five out of thirteen condemned tuberculous cases healthy; but as this is impossible with human patients, medical men must be content to abide by the entire disappearance of all physical signs of fatty degeneration as already detailed, and be satisfied with the restoration of the fatty-ill patients to perfect health —E. C.

The auscultation of lungs necrosed and breaking down by fatty degeneration differs not from the auscultation of tuberculous lung necrosis; indeed the two may be found together. The morphology of tuberculous lung blood is the great means of distinction between lung tuberculosis and fatty consumption or necrosis of the lungs. The percussion signs are the same as in tuberculosis of the lungs. If one places the keynote of normal chest percussion at F, fourth line of the bass clef  then percussion of complete dulness may be represented as F in first space below bass clef, *i.e.*  and varying between these notes according to the amount of density of the lung tissue under observation.

Mensuration is the same as in tuberculosis or other ordinary disease.

The dulness on percussion of a fatty heart is not so distinct as the dulness of cardiac muscular hypertrophy.

Over cavities formed by fatty necrosis of the lungs the percussion will be as if the cavities were tuberculous.

NOTE.—Fattily degenerated tissues pit on pressure, as in œdema of the legs, but the pit is of briefer existence and there is more resilient resistance to the finger. The resilience to the touch given by fattily degenerated tissues is not that of healthy tissues. This can be learned best by actual trial of healthy and obesic tissues.

It should be remembered that fatty tissues vary from a normal tilting elastic resilience, when the margaric acid fat is solid as it should be (somewhat like a stearine candle), to the greasy, oily, lardaceous, unsolid feel of liquid fat under the tissues that is of oleic acid. It seems almost incredible that margaric acid in human fat should change under ordinary temperatures to oleic acid fat, but clinical experience authorizes this statement.—E. C.

VI.

TREATMENT OF THE FATTY ILLS AND THEIR MASQUERADES.

In treating fatty degeneration the principles are general and particular.

Regarding the former, it is "Nature that cures," if allowed the opportunity—that is, the vital forces, actual or potential, operate to restore normal tissues in place of the fattily degenerated. This doctrine I endorse from facts occurring within my own personal knowledge for many years.

To accomplish this the causes of fatty degeneration must be stopped. If these causes are the languid or interrupted functions of the tissue cells, such functions must be made active and constant.

In case it is a ligature that impedes or interrupts functions by pressure (as when fatty ills are caused by a string tied around a limb), that ligature must be removed.

The cell functions then may and generally will be restored, because Nature, furnished with a proper blood-supply, will have a chance to work, while a ligated limb cannot have normal exercise to quicken circulation. Hence the general principle as to clothing and body environments, that they should not act as compressors, but be worn like a well-fitted bandage support. It is a physiological sin to impede or retard the circulation by means intended for protection from the weather and immodesty. If the

cause is from paralysis occasioned by too much gas in the alimentary canal, arising from a fermenting diet, then this diet must be stopped. In this line comes the withdrawal of foods, especially drinks containing carbonic acid gas, Seidlitz powders, soda-waters, champagnes, sparkling liquors, etc. Lately a lady of sixty-five years, whom I knew to be in the fatty-degeneration time of life, suddenly and unexpectedly died in the arms of her son, and the cause of her demise was given as "heart failure" (a result, not a cause). Her heart had troubled her somewhat, though she was not thought to be ill. One evening she had some indigestion (which means excessive production of CO_2, gas) in the stomach. For relief she took a Seidlitz powder, which also developed CO_2. It was an unwise procedure, inasmuch as she was already embarrassed with CO_2 enough to distress her weak heart! It was late at night, and she had retired. Fearing that her son had gone to sleep down-stairs, she arose, put on loose clothing, and went down; and when she came to him she would have fallen dead on the floor but for his arms! I did not see her after death, but it is probable that the heart was fattily degenerated, and that the CO_2 combined with the extra exertion to rise from a recumbent posture was a sufficient cause of death. Again, at a club annual dinner, on a Saturday evening, Doctor Blank was present as well as myself. On Monday morning the Doctor was found dead in bed of "heart disease." Liquors charged with CO_2 were drank by the deceased at this dinner; and although fifty-two years old, he ap-

peared more senile than some at sixty-two. If I am correct in assuming that he lived well at this and other clubs, then it is quite possible his heart was undergoing fatty degeneration, and was upset at about 2 or 3 A.M., which is the usual time for such deaths, because the CO_2 accumulates to its maximum about these hours.

These cases are mentioned as they were close to my knowledge, and hence excite (laudably, I think) an intense desire that the lessons taught by these sudden heart-disease deaths should not be lost on myself and those I can influence. At the said dinner I drank water only, thus making myself so uncongenial to a Yale alumnus next to me who drank wine that he changed his seat. I suppose I was thought by him no fit companion; but I experienced no discomfort from my abstinence, but on the contrary my digestive organs next day were greatly at peace, and I ran no risk of upsetting my heart. I belong to a family where most of its paternal males died of heart disease at about the age of sixty years (my own age). Had I not known what I here assert regarding heart disease, I think I should have died in like manner before this, especially as I have reasons for believing that my heart is hypertrophied.

To reiterate: Those fed on fatty foods to excess are prone to become fattily degenerated; hence it is a general principle of treatment that fatty foods should be avoided. Cream, milk, and butter are the least objectionable, but even they will sometimes keep albumen in urine. Suppose a patient with fatty ills has been relieved of albumen, casts,

and fatty epithelia in the urine, and takes cream or any other fatty food, and afterward the albumen, casts, and fatty epithelia are again found in the kidney secretion, or fatty white corpuscles and oil are found in the blood, or free fat in the fæces—are not these sufficient clinical reasons for the abstinence from such foods? This very experience happened recently in a patient suffering with consumption of the bowels and fatty degeneration.

No clinician can expect to handle fatty ills successfully unless versed in the micrographic study of the above morphologies. No matter how well the patients appear, the case is not complete unless the physical exploration shows normality in the form elements of liquid tissues.

Unless there are some special indications demanding, alcohol should not be continuously used in cases of fatty degeneration. Employed as a beverage it acts as a cause of fatty degeneration, for not only is it a carbohydrate and hence easily transformed into fat, but it likewise interferes with nutrition and other functions of the cell tissues, to the production of fatty ills,—as seen in the toper's cauliflower excrescent nose, in fatty and fibrous livers, etc.

Of like character to alcohol must be considered carbohydrate foods, since when taken in long-continued excess they undergo alcoholic and vinegary fermentation in the alimentary canal, as shown by the alcohol yeast plants, the vinegar yeast plants, and the CO_2 which always goes with alcoholic fermentation, and is seen in raising bread with yeast.

Or to reverse this statement: The presence of CO_2 gas in the alimentary canal proves the presence of alcohol, because one is not evolved by the yeast protoplasm without the other from fermenting carbohydrate foods. Indeed, I believe in the statement that the teetotallers who suffer from the brewing of alcohol CO_2 and vinegar in sour stomachs are more numerous than those who similarly suffer from intoxicating distilled liquors. It often happens that when total abstainers, bloated with CO_2 gas and showing signs of fatty ills, are taken off from their carbohydrate foods altogether they will act and feel as much prostrated as topers when their drams are cut off. This is also true of some patients with the varied forms of tuberculosis. Vegetable foods made up chiefly of starch and more or less sweet juices will ferment after eating, especially when eaten raw, which arises partly from the fact, frequently proved, that both alcoholic and vinegar yeast abound in and on the skins or tegumentary covering of such vegetables. Cooking destroys these yeasts, which is one reason why cooked foods are as a rule more digestible than raw.

It should be said here that perfectly fresh fruits, plucked from the plant, are much less fermentable and of course more easy to digest than when long removed from the source of growth,—all housekeepers know that freshly picked vegetables are the best. I once knew a farmer who would gather green corn in the field, and after a keen run would deposit the ears in boiling water prepared by his wife, and cook only a few minutes, whereby was obtained a most palatable, delicious, deli-

cately cooked, and extremely digestible product. I think it would be better to steam the maize where it grows. Even thus half-cooked, for canning it would keep for a long time (as does fish), preserve a fine flavor, and be ready to serve with a little more cooking. The principle seems to be that the heat of cooking destroys the peripheral and interstitial yeasts, so that the metabolic changes that fermentation produces in organic substances are avoided; changes which culminate in the wilting and decay of plants and animals when removed from their sources of life.

Intestinal gases — hydrogen, sulphydric, phoshydric, etc.— arising from the fermentation of meats are more poisonous than the common alcoholic carbon dioxide; they paralyze more quickly and profoundly. Fibroid and sclerotic degenerations follow the action of these gases more readily than fatty degeneration does. Meat dyspepsia is sometimes met with, and is to be treated by vegetable food and by nourishing enemata of animal food.

The probabilities are that every vegetable and animal food has its own alcoholic and acid yeast. The botanical features may be alike, save as to size; but the protoplasm differentiates the products, as in cases of the epithelial protoplasm of liver, parotid glands, pancreas, kidneys, ears, and so forth.

Another general principle of treatment is to quicken the circulation and thus quicken the functions that have been impeded or retarded. This may be done by employing quickening foods, such as hot water at the temperature of tea and coffee, one pint taken

by the mouth one hour before each meal and on going to bed,—distilled water is best, as it more readily dissolves out all impeding gravelly deposits found in the system, and at the same time quickens the circulation while removing mechanical impediments. Hot water causes peristaltic contractions of dilated stomachs and intestines, thus removing paralyzing gases by belching or voiding; promotes peristalsis downwards and sometimes upwards, as lukewarm water does usually; dilutes the blood, so that it is less viscid and requires less force for the heart to propel it through the capillaries where the retardation of functions occurs, and whence is the very citadel of fatty degeneration.—This is a very important point! Consider that the average red corpuscle has only one forty-eight-thousandth inch leeway in the capillaries, and that, on a modern estimate, the average human male adult body capillaries would extend in a straight line, if it were possible to place them end to end, more than 24,000 miles—*i. e.*, around the earth! From this it is seen that the heart has no slight work in keeping up the blood circulation, no matter if the capillaries average one three-thousandth of an inch in diameter; hence also may be inferred the value of hot water in lessening the work of the heart, and quickening the capillary circulation exactly where it is wanted. Hot water washes out the liver, which is a combined or compound gland, double if not triple, dense in structure, complex in architectural design, and secreting bile, which is one of the most viscid secretions in the body; the washing out is so effectual that usually the fæces

will be stained black for more than six months after patients begin and continue to use it. The liver is specially liable to fatty degeneration, as it has normal fat-secreting epithelia, —the bile is full of cholesterine and other fatty bodies,—and its canals are tortuous in a somewhat inelastic histological environment.

Probably the good of the hot teas of our grandmothers, and of the *ptisans* of the French, is due more to the hot water than to the herbs, because the former, employed without the latter, has been followed by equally good if not better results.

The use of hot water in colds shows how it quickens the circulation. A "cold" is a very complicated matter, but it is enough for the present purpose to say that the blood is driven, by the "cold" contracting the capillaries of the surface, in and on to the air passages, as a general rule perhaps, because they are so much exposed and have no rest from their indispensably vital and continuous work. Congestion follows and the circulation is impeded. Now if, in the pre-stages before the plastic products of inflammation have been poured forth, hot water is copiously drank once an hour, or oftener, not only does it warm the chilled outside surface, but the inside also. The dermal capillaries are dilated; sweat is organized by the epithelia of the sudoriferous glands; urine is voided in increased amount; the internal congestion is relieved (unless too long and firmly seated, and the tissues are on fire with inflammation, and even then the hot water comes not amiss) for one reason because there is not blood enough drawn from the rest of the system to keep up the congestion.

Hot water is not a dangerous remedy, as some aver positively, unless one is immersed in it; neither does it parboil the alimentary canal, or produce ulcers as some have alleged, on the strength of an experiment whereby hot water was *injected* into the stomach of a dog and produced ulceration. Swallowing, however, is not injecting; and I have seen ulcers of the stomach, but they were not in hot-water drinkers.

From the prevalence of gravelly diseases, as rheumatism, asthma, gout, and urinary calculi, which impede circulation and thereby predispose to fatty ills, it would seem as if people did not drink enough water to keep the body salts in solution. It is not reasonable to expect gravels to be deposited when there is water enough to hold the saline bodies in solution, nor fatty degeneration to occur as commonly as now. Again, the crematories show that a very large part of the human body is made up of water in organic combination; it is also shown in the destruction of dissection subjects by desiccation. It may therefore be insisted that a large supply of water is needful for normal human life.

To sum up, if it is desired to quicken the circulations of blood, chyme, glands, alimentary canal, osmosis, nerves, so as to keep the body systemic, literally in good running order, use hot water plentifully. If one is cut down to only one resource in disease, he should by all means hold on to hot water, which alone has cured cases irresistible to other treatment.

Another quickening food is beef, because the heart so promptly responds to and is so

greatly strengthened by it. It is unnecessary to increase the frequency of the pulse in order to increase the force of the circulation, but it is necessary to increase the power of the heart without quickening the beat.—The vernacular expresses this idea in classing beef as a "hearty" food. If people, instead of being afraid of "hearty" food, would use more of it, thereby strengthening the heart, the prevalence of fatty ills and their masquerades would be greatly obviated. Next to beef come mutton and lamb; next eggs (especially the whites), game, codfish, fresh lobster, scallops, clams. But beef is the best of all to quicken a retarded or impeded circulation, which is the main aim.

Another general principle in the treatment of fatty ills is the conservation of vital force or dynamis, so as to have more power to run the body machinery and functions. All schools of medicine adopt this principle, no matter what they profess to do or teach; for all inculcate rest, and the human body is ever manufacturing and storing force while at rest. It is so also with animals. Studying teaming on a high ridge where there is heavy travel; the hill is so steep and sometimes so muddy that loaded teams often get stuck. Wise teamsters in such cases simply pause at the foot of the hill and give themselves and teams a longer or shorter rest, whereby nerves and muscles are getting reinforced and are storing up dynamis. After a little the teams carry the load. This shows that force is acquired from the food in the body all the time. If not, how could such rest help? It must be that our bodies are

storage batteries that accumulate power from within, power which can be so used up as to cause a stasis of functions. The horses in question could be driven to death, as some people drive themselves.

Now when the functions of the body tissues are so impeded as to run into fatty ills because of the loss or waste of force, what more sensible way is there to obviate than by rest? Rest—from toil outside the body, as on Sabbath days; from toil inside the body in the functions of life, repair of waste; by the use of easily digested food; by assuming a recumbent posture, where the heart does not have to lift a hæmostatic pressure of a column of blood the height of the body; by relief from the tight ligations and environments of closely-fitting clothing, as garters, corsets, waistbands, boots, shoes, collars, ill-fitting suspenders, trousers, waistcoats, etc.; by being in one even temperature in bed, when a standing posture gives a difference of 15° F. between the head and feet; by relief from the cares and anxieties of business, work, worry, or pleasure; by having the body lie on the largest possible amount of surface; by being relieved from the weight of the body on the feet; by rest when tired out and the body is as it were cannibalized by consuming its own capital and reserve of capital. All these savings in the expenditure of life force accumulate a large power to run the functions, which were degenerating, it may be into fatty ills; Nature, having thus saved force, uses it to stop the fatty ills.

What is life but a question of expenditure of vital force? What is constitution but the

force conferred at birth, with which to run all our organs and tissues in our life-work, and which is ample if wisely expended? How can the constitution be saved better than by proper exercise and rest? All schools of medicine commend the conservation of force by sending patients to bed, withdrawing them from all abstracting and distracting influences. Note that sick cats and dogs, as well as many other animals, curl themselves up in a corner or some snug retreat, and after awhile recover health, simply by saving force for Nature to repair with!

But it will not answer to rest all the time; some exercise is necessary; many a fine horse has been ruined by idleness—fatty degeneration from high feeding and disuse. This statement covers the ground, as it is easy to understand how exercise would have prevented the fatty ills.

Exercisal motions promote the circulation of the blood, and of the osmotic movements connected with nutrition, the proper organization of glandular secretions, downward peristalsis, to name no more. If the sufferers from post-partum convulsions had been obliged to do housework during pregnancy, they would probably have escaped acute fatty degeneration. How often do active business men, retiring after the age of sixty, and doing nothing, die from fatty ills! It is a great art to know how to grow old gracefully, and to manage prophylactically to have exercise enough to avert fatty degeneration.

Exercise for the fattily degenerated must be managed with care. Usually such persons exercise with gusto at first and take hold

with vim, but soon the fatty heart shows signs of weakness; if the movements are violent and prolonged, the heart will sometimes fail, and death ends the case. Such should be cautioned to keep strictly within their strength limits, and to stop at once all exercise the moment they observe weakness. Hence all competitive physical or mental contests must be avoided by the fatty ill, who should recognize their limitations by their own cerebrations.

The following remarks on "Aids to Longevity" from *The Hospital* (London) shows the difference of climate adding years to life by a light and dry atmosphere; one has only to pass a winter in London to appreciate the significance of this quotation; for the atmosphere of this city is very depressing when the fog is so thick at 10 A.M. that the street gaslights are kept burning.—It should be remembered that apparently small causes tell for good or bad in those who are advanced in life—the very time for fatty ills:

There are two sorts of pressure that tend to shorten life: Blood pressure within, and: Atmospheric pressure without. The latter is an especially important factor in a humid climate. In advancing age the circulation of the blood and lymph tends to become slow, and the enfeebled (fatty) heart finds its embarrassments increased by this condition. Especially do the more vascular organs, such as the lungs, the liver, and the kidneys, put skids on the wheels of the blood circulation.* Plainly, then, an important condition of cardiac easement, and therefore of life prolongation, is the maintenance of an uncongested state of

*That is, the conditions of fatty degeneration are set up.—C.

lung, liver, and kidney.* Thus are internal pressures relieved and thus is cardiac energy conserved. Of almost equal importance, at any rate in Great Britain, is the question of atmospheric pressure and moisture to aged persons. Situations which are at once low-lying and damp give of course a maximum of atmospheric pressure. Such a pressure weighs down at a single stroke body, mind, and life. The difference to aged persons living at the sea level and five hundred feet above it, between living in a moist atmosphere and living in a dry one, is sometimes quite incalculable. Not seldom may life be lengthened five or even ten years by living in an atmosphere both light and dry. These physiological considerations are commended to the aged, and to the physicians of the aged.

In other words, the excessive atmospheric pressure retards the circulations and predisposes to fatty ills.

Again there is the psychological stimulus of ideas. In law and war mind often molds results; in murder trials the intent convicts.—General Grant commanded with the idea that war meant kill or be killed. Those who treat fatty ills must understand that it is a fight for life, and the patients must kill or be killed.

My wife's brother was one of the Ninth Massachusetts Battery, which withstood the famous Pickett charge at Gettysburg, with sixty out of eighty men killed, wounded, or missing, and sixty out of eighty-six horses killed, wounded, or missing! He states that he was so inspired that he felt no fear, could calmly dodge cannon-balls as they came, and was not moved when one took off the head of a comrade next him! This admirable

* Favorite seats of fatty ills.—C.

courage is paralleled when patients, away from the excitement of battle, stubbornly fight for life with fatty ills for weeks, months, and years. Their wills are determined to kill the disease, and these wills stimulate the life forces of soul and body to victory. I have seen a patient with Bright's disease die when there was no will to fight it, no confidence in the physician, and no pain to stimulate to action. The most difficult cases to handle are those which correspond to conventional (I am sorry to say it) professional ideas, that teach the shibboleth "No pain, no disease," which is about as sensible as to affirm that there is no light where there is no eye to see; as if the effulgence of the sun was caused by organs of sight! Destroy all eyes in the universe, the sun would shine the same.

Will is not everything, however. A widow with children nearly grown was a faith-curist. Her oldest son awoke one morning with fever, sore throat, and insisted he should stay at home, as he was too ill to work. "Oh, no," replied the mother; "go right along about your business, and it will get well of itself." He went, and the next day died!

There is no doubt much useless expenditure of force by worrying—force which if conserved might often save the sick. But in fatty ills the cure takes much time, and as one well puts it, "Not only must the physician believe, but he must make the patient believe in the treatment and bend all energies to the work." Force is lost by not having the confidence which inspires faith and hope, and, to repeat, this very force may be

just what is needed for the cure; when this is so, then the cure is lost by lack of this faith, and hence the great value of the stimulus of ideas. This principle works even with medical men. A young physician settled in a place I had recommended, but he proved a failure. Afterwards he told me of it and related his first medical experience. A wrong diagnosis he arrived at, and so sent for aid, in consultation, to the "old doctor," who was of course a rival and regarded him as an intruder. There was no trouble with the case, and it was safely ended. Said the young doctor: "I made up my mind beforehand that I should fail!" His after history was sad. He drifted from his profession into keeping a candy and tobacco store; and when I tried to help him he said it was "of no use;" he finally suicided by opium. The moral of these things is that if doctors and patients go to work with the idea to have fatty ills kill, death must follow as a general rule. This was so in the case of a very old lady years ago in my father's practise. She sent for him in her fatty ills, saying that she "was going to die this time sure!" "But," said he, "you pulled through before." "I don't care, I shall die," she replied, and she did! It is not generally advisable to undertake cases where they have no will to get well, nor to do as they are told. When the will flags, confidence may be retained by telling historical truths about the case, even though they may be unfavorable. Then, when the reports are favorable, they will be much more satisfactory, because it is known that the truth has been told and can be de-

pended upon. This is a nice ethical point to handle in critical cases of fatty ills; as oil, albumen, casts, fatty epithelia, precede the feeling of malaise and illness, and should be removed before the soul failure.

It is bad when the patient loses confidence in his or her physician. Were it not that people have faith in God and meet together to get comfort from His worship, and from one another, the direst results would follow; the terrible fear that would replace this faith would cause deaths. History relates how, in ancient times, when a walled city was besieged and thought to be taken, the milk in a matron's breast was poisoned, so that her suckling perished at once. On March 19th, 1894, a woman with a seven months' babe had a mouse run up inside her skirts, which frightened her very much, and the child, never before ill, dieting solely on mother's milk, was in consequence ill all night with colic and diarrhœa!

I can personally testify that going to a prayer-meeting is a very good way to gain strength and to banish a distressed and troubled state of mind, for it literally furnishes strength to the weary soul and body. On these principles a level head and determined spirit will inspire hope, so that crises in fatty ills will be successfully met with which otherwise might prove fatal.

Another form of treatment of fatty ills is by the conference of force or *dynamis*. In King David's time of fatty ills he married a young wife, Abishag; "But he knew her not,"—she was specially to impart vital warmth and force. Thus "conference of force" was understood 1015 B. C.

When the woman with the twelve years' issue of blood touched our Saviour's garment's hem from behind and was healed, he turned and said, "Who touched me? . . . for the virtue (*dynamis*) has gone out of me." It was a conference of divine dynamis.

In 1873 I lay abed one hundred and ten days with a fractured patella. Friends and patients came to do something for me. I suffered greatly, and as anodynes amounted to nothing I asked them to rub the well knee. This done the pain would entirely subside in the fractured knee! Years elapsed before I understood that the relief afforded was by the conference of force.

It was said of the elder Pitt that none could come in contact with him in his cabinet without going away feeling stronger than before. A member of the British Medical Association present at the Leeds (1889) meeting reports that on his way home he met a large concourse of people surrounding a man who was lauding the wonderful cures he could perform very quickly of chronic diseases. He was using all the arts of barbering, livery stabling, jewelrying, oratorying, and tailoring. His hair was trimmed and dressed to perfection; he had equipages of striking magnificence; he was perfectly resplendent with gems, jewels, and gold; and was tonguey and eloquent. The medical man says further that in response to earnest invitations a large, heavy man hobbled in on crutches, evidently with great effort and much pain; he was assisted upon the stage and partially disrobed. The brilliantly dazzling healer then proceeded to rub him

vigorously, and kept it up with energy for twenty minutes, when the cripple got up with ease, walked off crutchless, and said he was cured! The rubber was all of a heat and sweat, tired out from his exertions. Now the medical man said that there was no doubt of the cure, but that he could not see clearly the *modus operandi*, and asked for an explanation. I give one. Allowing there was no humbug, nor hypnotism, nor deception, for the sense-striking environments strongly savor of the surroundings of jugglers, who make no secret that they deceive the senses of observers, or hypnotize the audience, it seems that the healer conferred force or dynamis, which bridged over the patient's lack of it; the active or passive movements helped as in massage. Thus I have myself many times relieved the severest neurasthenic pain by simply laying on hands without movements, and conferred force. Hence I am inclined to explain this and other reported similar cases as instances of conference of force.

Such methods do not always work. The late Judge Billings, of New Orleans, told me how his brother-in-law, sick with fatty ills, received a visit from a doctor in New York, who came in a six-horse chariot, with all fashionable appointments, and received $300, but no good resulted.

I have often seen my father take an eighteen-months-old, teething, cross, crying and restless babe from the arms of its mother, when it would immediately quiet down and go to sleep! Twenty years later this was explained to me simply by the facts the tired-

out matron had no force to confer (more likely she withdrew force from the babe), and my father being rested at once passed his force to the infant. I think that the success of practitioners depends somewhat on the quality; and no matter how little or much they know, they impart force to the weak, who are better for it, and hence feel the need of such physicians. This may explain the success of those with whose principles one cannot agree.

In its special application to fatty ills it is easy to see how conference of force will quicken the circulation and other functions that have been impeded or hindered. Osteopathy, which it is claimed cures thousands annually by manipulations of all sorts of contacts of strong persons with the patients, must confer force and thus account for its recoveries. Also I think that the secret of massage lies in the conference of force more than in the physical and mechanical results of manipulations.

Again, may not Sir Humphrey Davy have had this power? It will be recalled somewhere about 1800 A.D. it was thought that the newly discovered nitrous oxide gas would cure everything, and Sir Humphrey went to Guy's Hospital, London, to administer it to the hæmiplegic as an experiment. There was a good amount of paraphernalia and preparatory arrangements; it took some time to fix the apparatus and make the gas in the ward by the patient's bed. When all was ready Sir Humphrey placed a thermometer under the patient's tongue. When the record of temperature was taken and the thermome-

ter removed the sick man, deeming he had received the treatment expected, remarked he felt "very much better." Sir Humphrey at once took the cue and said, "Well, that's good; we will come to-morrow and make a second trial." This was done, repeating all the details as before. The third time the paralysis was cured.

It is quite certain that force is used up in massage; this was shown in the exhaustion of the peripatetic healer aforesaid. I have had my right hand weakened and partially paralyzed for a fortnight by laying it too much and too long on a neurasthenic patient. Also I knew a masseur who rubbed so many patients one day that he suddenly died.

There is some stimulus from massage as in statical electricity; the circulation is advanced in the capillaries and veins; adhesions are torn up; the blood is drawn to the surface, rubbed, and so forth.

If, as some claim, there is animal magnetism evolved in massage, then it must at the slightest contact go through the body like electricity, making a short circuit. Be this as it may, I have no quarrel with masseurs; they all claim to stimulate impeded and retarded circulations, whether of blood, lymph, nerve force, or osmosis in cell biology: and this is what we are after in the treatment of fatty ills and their masquerades. But so long as masseurs magnify their ideas as to belittle the medical profession, it is well to know the exact standing of massage.

A distinguished elocutionist discarded educated physicians and employed a masseur for

everything; and the latter undertook even to relieve retention of urine by rubbing. Think of the agony induced by a distended bladder massaged for two or three days! Finally, a physician was called who catheterized him successfully, but too late to avert death! Had this savant lived in Japan three thousand years ago he would have had a better chance of relief, for Japanese catheters three millenniums old have been exhibited. One of the best ways to break up perverse and obstinate wills that are reasonably insensible to persuasions and commands is the use of the whip or nursery slipper, which are exaggerated forms of massage, certainly revulsing sensation and withdrawing blood from the congested centers of thought which make the trouble! Indeed, reasoning in this way when our children were young, I persuaded my wife if they got into obstinate "tantrums," with head hot and flushed and face red, the application of cold water to the head would be preferable to the rod or slipper, because it would cool off the heat and drive away more quickly and safely the cerebrally congested blood. It proved so; for the cold water no sooner cooled the head than the child was manageable. Evidently the effect was due to the force saved by the relief afforded to brain congestion. But this stimulation does not fully apply to the treatment of fatty ills, where there is a loss of power due to inherent tissue destruction and weakness. The whip, as once suggested by a patient with Bright's disease, was not applicable, on the principle that it is useless to kick a dead dog with naught to respond to the impetus!

The good conferred by massage in fatty ills must be in the conference of force upon the disturbed processes of laying down and taking up tissues (metabolism), so that they will go on normally, and so that healthy tissues shall take the place of fat. This will be done, provided aliment is furnished that affords normal amounts of nutritive substances which can be assimilated, taken in, and laid down with a minimum expenditure of vital force, provided that there is dynamis enough to "run the machine."

A regard to this principle would render massage even more useful, unless the idea is to live in physiological sin, and have masseurs to help pull the sinners out of their sin only to fall back again, and so on. This doctrinal principle is not yet received, but I am convinced of its truthfulness and hopefulness from my own experiences, which I cannot ignore or deny.

Heat is a form of motion which has been long universally used as a remedy, simply because it has been found to be immediately good. It is easy to see its applicability to the treatment of fatty ills. None would think of such a thing as applying cold to a part whose vitality is diminished, and whose circulation is retarded and impeded; nor of allowing the body of a fatty-ill patient to remain cold, because the latter aggravates the causes of such ills. Nor should the application of sweltering heat be employed, because of its nerve depression, such as is seen in sunstroke. These statements are truisms; but it seems that, when we have systemic loss of motion, the imponderable, colorless, invisible yet

measurable form of motion which we term heat should be mentioned among the other means for restoring normal biological motion.

It has been said that "Heat is life and cold is death," and the Thompsonian system of medicine was founded on this principle, and patients treated with natural and artificial heat. Capsicum was greatly employed because it is "so heating," meaning that it confers motion and emotion (pain); but this principle being applied where there was no dynamic potential force, it entailed useless suffering. Fatty ills require more force to be added, not removed.

Air should be fresh and pure, for hygiene has its place in the management of fatty maladies. Living-rooms should be well ventilated, and warm, but not hot. Mountain and sea air often quicken the circulations, redden the cheeks, and confer a peculiar sense of refreshment to the whole body, and the millions of dollars spent each summer and winter in ocean travel, hotels, sanitaria, yachts, and steamships testify to the value set upon fresh, pure air. Would that the like estimate were set upon good air at home! Too often the ill are deprived of it for fear of taking cold, or as if it cost a dollar per cubic yard! In the sluggish and impeded circulations and functions of the fatty ill, there is no danger of taking cold by ventilation with proper management. Suppose extreme cases sick in bed: With such I have been in the habit, in city or rural districts, summer or winter, night or day, rain or shine, of ventilating and affording great relief by throwing a light shawl over the patient's head; by opening

every door and window wide; by letting the air be changed in one or two minutes; and then, closing the doors and windows, uncovering the face. This process can be repeated at will, and it does not chill the room walls. The airing can be accelerated by half-opening a door and swinging to and fro from right to left in moderate time, when there is no wind and when there is a damp, stagnant condition of the atmosphere, and the air does not seem to move, especially from the culde-sacs and corners of the room. Beds should be thoroughly aired through the day, and made up at night, if the patient is up during the day. Day clothing can be aired at night, and night clothing aired in the daytime. The refreshment found in thoroughly aired clothing is such as is felt on changing a soiled shirt for a clean one, and is material.

This leads me to speak of the hygiene of the skin. The skin is a sewer twenty-five miles long, if, as there is reason to believe, the corkscrew ducts of the sweat glands are correctly estimated to be of this great length! What with sweat, fat, scaly epithelia, foreign substances, as dirt (and the morphology of clothing and air), the skin becomes clogged and does not perform its functions, which are more or less vicarious of the functions of the internal organs. When the skin is kept clean by baths and well ventilated clothing, the system runs with less friction. Every one doubtless has noticed a much better feeling after a bath when tired, worn, and in need of ablution! Strength is conferred by thus saving it. The fatty ill need this more than the well, because the skin has more to do on ac-

count of the weakness of the kidneys; for them warm baths are better than cold, which may harm fattily degenerated tissues by shock. When cold baths are not followed by a healthy reaction they should be avoided. I will here relate a curious case of small kidneys unable to be sufficiently vicarious with the skin:

A child at the age of six years almost died from scarlet fever. In her girlhood she lived much out-of-doors like boys, and her ruddy face looked as if she were the incarnation of health; her laugh was so hearty that some said they would go miles to hear it; yet she had a great antipathy to baths of any kind, even salt water seaside baths. In my mind's eye I can see her as she appeared on one occasion at Swampscott beach, refusing to bathe with the family, and how her mother and aunt on either side forced her to the water and put her in despite her loud screams, tears, and entreaties. Her distress was so great that her bath was given up! The same thing occurred at home with ordinary baths. Sponge-baths she could take. This unusual antipathy was an engima until she died at the age of thirty-two. Her death, as shown by autopsy, was from cerebral hæmorrhage filling the right ventricle, causing hemiplegia of the left side of the body. Her memory was not lost. There were fatty heart, fatty liver, with fatty tumors embedded in the hepatic substance; fatty kidneys, which were of the size of those of a six years' child! It appeared that the kidneys were arrested in their development by the scarlet fever, so that the skin was too

large for the kidneys. When the functions of the skin were interfered with, by a cold sea-bath for example, the blood was thrown in upon the too small kidneys, which caused so much reflex trouble that the above distress was manifested and accounted for. But for this she might have sooner died. At any rate, if this explanation be thought unsatisfactory her case certainly proved the vital value of fresh, pure, outdoor air as a gaseous food.

In 1888 while visiting at a stock farm outside Louisville, Kentucky, my son, Doctor John A. Cutter, was consulted by a lady who for fifteen years had suffered from intolerable itching after bathing. She was the mother of several children; had nearly died several times from post-partum hæmorrhage; her water was deeply loaded with bile; under the microscope crystals of cholesterine were found in the urine and blood. He put her upon absolute beef diet for a month, and then a more elastic diet was allowed; the urine cleared up, the symptoms of itching were controlled. Several years afterwards she wrote him that she had been in good condition and comfort. This was a case of fatty liver and fatty womb.

Ammonia sponge baths—that is, two or more teaspoonfuls of aqua ammonia, according to strength, to one quart of warm water—are excellent, night and morning or both, in cases of fatty ills. It is only necessary to squeeze the sponge so it will not drip, rub over one part of the body, and wipe dry; next another part of the body; and so on until the whole surface is gone over. The glow and tingle

which usually follow prove that the circulation in the skin has been quickened, and thus internal congestion may be removed.

Turkish baths are well borne by some, but I think are not so good as the ammonia sponge-baths in these cases. Indeed, I was once called to a man who was supposed to be dying in a Turkish bath. His heart was fatty and had almost ceased to beat because of the shock of the bath; this leads me to say that hot tub-baths are agents of great biological power. The following cases prove this:

A stout, healthy looking farmer suffered agonies from what appeared to be passage of a calculus through the ureter; was not relieved by opium and anæsthetics; but when submerged in a hot-water bath in less than three minutes he was relaxed and the agony relieved. The calculus was voided later.

Another was a middle-aged woman with similar symptoms, to whom I was called in consultation. The attending physician had wisely exhausted the resources of drugs, and was willing to use the very hot bath as above. Immediate relief followed the relaxation thus induced. It has seemed to me that the fibrous structure was so relaxed by the hot water that its normal caliber of one-eighth inch allowed the passage of a stone one-quarter inch in diameter; or that the ureter was so softened as to give way under the tremendous pressure exerted by the combined epithelia of the kidney, whose protoplasm kept pumping urine into a pelvis blocked by the calculus in the ureter. If this seems an unwarranted deduction, I refer to the celebrated squash experiment of the late President

Clarke of Massachusetts Agricultural College, in which some seventeen hundred pounds were lifted by the protoplasmic force of the growing cells! Also to the fact that I saw at Sonoma, California, in 1871, a champagne bottle whose neck had been squarely cut off by the inside pressure exerted by the protoplasm of the yeast cells producing carbonic acid gas and alcohol—a dead lift, it was said, of one hundred and twenty-five pounds to the square inch. Again, my father and I examined the corpse of a child two years old, dead of an obscure trouble in the abdomen. The walls of the urinary bladder were three-fourths of an inch thick, concentrically and wholly hypertrophied. Leading from the fundus of the bladder were two membranous tubes, of the same size and appearance as the small intestines over which they ran; they led to the kidneys, which were also greatly dilated, and proved to be the ureters expanded to this enormous size through the resistance proffered by the increased thickness of the bladder-walls and the consequent longer valvular passage through those walls. It is not improbable that the ureters were fattily degenerated, and it is a matter of regret I did not ascertain if they were so. The point is established, I think, that ureters can be dilated by intranephritic secretory protoplasmic epithelial pressure. Indeed, is not this same protoplasmic pressure shown in the enormous enlargement of the sebaceous follicles of the scalp (when they grow as large as hens' eggs) filled with cholesterine?

Water-baths should be used with judgment, not as cure-alls but as useful hygienic

measures, to go along with other means employed to quicken the circulation and functions of cell life in cases of fatty ills.

Electrical baths are useful, for they pass a current through the body systemic which is ill with impeded and slowed functions; not only this, but metals and reagents are now proved to pass through the body from one pole to another with electrical currents. When I was a medical student I met a man who showed his apparatus for electrical baths, and said he accomplished this transfer, but J. P. Cooke, my private chemical preceptor, did not believe it possible. I thought it might be so, but yielded to the superior knowledge of my teacher. Forty years later this was brought out as a new discovery in the proceedings of the American Electro-Therapeutic Association. I, however, give the credit to my first informant.

Dress should be comfortably warm, since a chilled body means more resistance to the functions and circulations of the fatty ill, and means more *dynamis* needful to run it. But we aim to need less force to run the body, and more left to cure with. It is work to live. It is work to run a normally warm body with its one hundred thousand miles of circulation! It is more work to run this cold than warm. This difference may be all the difference needed for cure; hence dress warmly.

Also dress loosely. I have hinted at the effect of ligatures and tight environments in producing fatty ills, and at the saving of force secured by having the body resting free from all girths and weights that compress and

weigh down the trunk and limbs; and I would reimpress the need of loose garments for the fatty ill. When I see a fat middle-aged lady girt with corsets so tightly that her waist is smooth and shining; that her breasts heave and palpitate with upper thoracic respiration, when she should breathe by the diaphragm and abdominal muscles; when her eyes protrude from pressure behind them, I think of a beetle in a vise trying to be an ant; of how the lady is, at the behests of fashion, only laying herself down as a sacrifice to fatty degeneration; that if there were a law — municipal, State, or national — thus to squeeze women by corsets, there would be a rebellion at once! Yet this invitation for fatty-ill immolation has been accepted by women for ages. I have volumes bound in parchment, of German inaugural medical theses, read and printed beautifully in the Latin language nearly two hundred years ago, in which one young candidate for medical honors bewails the fact that the ladies of his time would persist in wearing corsets no matter how much medical men opposed! I repeat this wail. While a few women are wise enough to abjure corsets, the vast majority do not, and they can moreover point to female physicians who endorse them, and some male ones also who have made themselves millionaires and society leaders by manufacturing and selling such goods.*

Professor Louis A. Sayre has done the world vast benefit by showing the good of

*Since this was written I have met the statement that women wore corsets 2000 years B. C.!

plaster corsets for supporting diseased spines, but he always places a temporary bag over the epigastrium so as to leave room for the normal expansion of lungs and stomach.

In my medical pupilage I saw taken from the body of a tight-lacing woman a fatty liver in which were left the marks of the supra-posed ribs, so deep as to leave permanent furrows with high ridges between. I asked the professor who exhibited it, "How could she have lived?" He replied, "The Lord only knows!"

Men advancing in age suffer,—I speak from experience. Tailors insist on a tight waistband to trousers; and when this is combined with a long, starched shirt-bosom there is a condition which is described in Acts* "where two seas meet." This meeting is over the pit of the stomach, where is located the solar plexus of nerves, called by the ancients "the abdominal brain," and it is a most sensitive spot. The result is that shirt-bosom and vest climb upwards and irritate the man, who naturally tends to fatty ills. His life is made uncomfortable by this arrangement, which invites these fatty ills. In the ordinary suspender the attachment to the waist is so made that the parts between the suspensions are drawn together; accordingly a properly measured waistband will become tight between the front and back when worn This I have relieved somewhat by a permanent wire stretcher sewed in where the wrinkles come. If some one would invent suspenders that avoid this difficulty I am

*Acts xxvii, 41.

sure old men would be much easier to get on with, and they would live longer. Cannot we have it the fashion to wear loose garments that shall not impede the circulation and functions of the human body as we grow older?

Another principle of the treatment of fatty ills is to strengthen the heart. Granting that one cause of fatty ills is an impeded and sluggish circulation, it is plain that as the heart is the great kinetic moving power of the circulation, to strengthen it is an indication special in its treatment. This can be done in two ways: By a special direct addition to the heart kinetic energy, and: By diminishing the heart labor. The importance of this idea is so great as to excuse a repetition of matters mentioned under other heads. Many good things in life are repetitions; for example, the beats of the heart, movements of respiration, eating, cooking, the love of home, friends, and country.

Kinetic force may be given to a weak heart by feeding, and here beef stands in the forefront; mutton next; game; codfish; poultry; shell-fish, as oysters, clams, lobsters; and other animal food—all of course properly cooked. The vegetable foods in their order of excellence are wheat, rye, barley, potatoes, tapioca, sago, string-beans, celery, apples, and prunes; vegetable food should not be eaten in a proportion of over one part by bulk to two parts of animal food. Of liquid foods, milk should be used sparingly, because of its fat. Coffee is thought by some to injure the heart, but more likely it stimulates a weak heart; still it is not a tonic like food.

The best authority I know of on this subject claims that coffee in moderate amounts does not injure the heart, provided that the other foods are used as indicated above. I think that coffee needs watching, and that it should be used without sugar, which does not strengthen the circulation, but often clogs the liver and thus increases the heart work. Hot water directly strengthens, as has been shown before.

Medicines, such as the pyrophosphate of iron, tartrate of iron and potassa, strychnine and its preparations (I like the sulphate, $\frac{1}{40}$ to $\frac{1}{30}$ of a grain at one dose), digitalin ($\frac{1}{60}$ grain); salicin and other like drugs must be looked upon as tonics for the heart.

A weak heart may also be strengthened by diminishing its work in the following ways: By posture—to wit, in bed in the prone or supine position, where the circulation through 100,000 miles of capillaries is made easier, because there is no head of blood to pump against: By postures that elevate the feet, thighs, and legs, or depress the head.* Per-

*The writer has invented a chair on the principle of Professor L. A. Sayre's triple inclined plane, in which the head can be smoothly lowered almost to the floor, and the lower limbs correspondingly elevated; or the trunk may rest as if in a chair arranged like the letter V with an angle of 45°, the head being at the top of one arm of the V and the feet at the top of the other arm of the V; or, as the chair has joints corresponding to the hip- and knee-joints, the legs may in this V-position be placed horizontally or at right angles to the horizon, or at any angle between. After the position is adjusted, turning an endless screw will throw the body-weight over the whole posterior surface

haps the relief given to the heart by position with this device may best be told by the relation of a case of hypertrophy and valvular lesion, where the fatty-ill patient had been for weeks unable to lie in bed more than half an hour at night because of dyspnœa. He was a man of sixty years of age; heart impulse felt over a larger area than normal; cardiac dulness on percussion increased in area; mitral regurgitation, orthopnœa, lower limbs swelled by the gravitation of dropsical fluid in the areolar tissues; anxious and distressed looks; irregular pulse. He was placed in the chair in question so that very gradually and carefully his body assumed the V-position. The strain on the heart was so removed that after two days' sojourn in the chair—now resting on thighs, then resting on thighs and back; now resting on back, thighs, and legs, changing the position himself by the aid of the endless screw—he was able to lie in bed and sleep all through the night! For the rest of his life he slept in his bed. Had I then known of the relation of food to heart disease and fatty degeneration I think he would have had a good chance for recovery, because he so quickly responded to the strengthening of the heart by mechan-

---

of the body, thus relieving the thighs, which sustain the heat, weight, and burden of the body in ordinary chairs. Cases of angina pectoris, valvular disease of the heart, fatty heart, functional disturbance of the heart, etc., have been at once relieved from pain, from palpitation, and intermittent pulsations with this device, and that too without medicine! President Garfield used this chair on the day before his death.

ically lessening its work. When hearts have shown signs of giving out, and I would have given diffusible stimulants, as Hoffmann's anodyne, alcohol, or hot water, the relief afforded by the above device has answered just as well, if not better, since medicines are not an unmixed benefit.

It likewise diminishes the heart work to remove paralyzing gases from the alimentary canal; when the gases leave the partial paralysis ceases and the load is removed from the heart. To refer again to that hour of the night which proves so fatal to cases of heart disease, to wit, about 3 A.M., when the gases have accumulated during sleep so as to be fatal, because the paralysis was too much for the heart to carry: It is wonderful what simple means may be used to relieve this grave complication, one of which is the "laying on of hands" of the patient, or better the hands of some one else.* Another means is to apply heat inside the stomach by drinking hot water; it is remarkable how quickly the distended stomach will contract and deliver the gas through the œsophagus. Probably

* It is probable that there are foci of nerve force in different parts of the body. The force may be accumulated in one focus, rather than in another, and the application of the hands may restore the equilibrium and quiet disturbances. I have had an instrument made on this principle for uterine cases. With it I have seen pain in the head relieved, for example, by connecting a flat electrode on the head with one in the vagina touching the uterus. So it may be when the heart is fluttering weakly with paralysis from stomachic gases, the patient may convey force by laying on hands or rubbing.

many of those dying from a fatty heart would have been saved by the free use of hot water combined or not with ginger or other aromatics. — Cold water drank by some will eructate gas. Another way is to apply dry heat outside, which is better than wet heat. I like bags of dry, hot maize meal, for it is light, fragrant, and retains heat for a long time. Some use hot salt. Hops and aromatics are good additions, but I think it is the heat that belches the wind. To show how hard it is to make this understood and practically useful to poor frail human nature, let me refer to a physician who was subject to heart disease: He intelligently dieted therefor, but at times he would "spree" on carbohydrate food.—He knew better, but he did it just the same; it was heart *versus* head, when the desires and feeling overcame wisdom and discretion. The result was that he died at about three o'clock one morning, his heart being overcome by stomachic gases. It was said that even he could have been saved if he had had on hand plenty of hot water to drink to start out the gas, and lessen the heart work.

Another way to strengthen the fatty heart is to have Nature absorb the atheromatous, calcareous, or arterio-sclerotic bodies that weaken and diminish the caliber of the coronary arteries, besides causing the arteries to become inelastic tubes in place of elastic ones. When these deposits are removed there is a notable increase in the supply of blood, with better nutrition and easier work for the heart. The way to do this is to apply the principles here laid down, and Nature will as

a matter of course remove these abnormal pathological products from any part of the body, provided she has time and proper materials enough.

As the heart is autonomic, and is the seat of passions and feelings, excesses of joy or grief, love or lust, anger or pleasure, sorrow or distress, will use up its force so that it has been known to stop suddenly and never resume its beats. Hence there is another way of strengthening the heart, negatively by the cultivation of calmness and repose, not being overexcited nor depressed; in other words, letting the head run the heart. Indulgences in overexertion physically, as in lifting weights, running up stairs or heights, and loud shouting, are liable to kill instantly those suffering from fatty ills, simply because there is not reserve power enough to stand the shock of the sudden demands made. Some years ago I observed that it required four times as much force to go up stairs as to go on a level at the same rate of speed. I was taken to task for underrating this effort, and a medical man of some experience declared it should have been stated "twenty times."

Suppose a steam-engine is doing good work and this is suddenly increased fourfold (people go up stairs quickly as a rule), what would happen? I asked this question of my brother-in-law, who has a three-hundred-horse-power Corliss engine, and he replied the engine would be smashed. In the light of this statement it is a miracle that people with fatty ills survive as long as they do. When they die we ought to rejoice that they lived as long as they did.

Light is an exquisitely delicate and almost unappreciably rapid mode of motion; without it man would die. It is a biological form of motion indicated in the treatment of fatty ills. Sunlight exerts a powerful influence on the growth of plants and animals; it affects the protoplasm of chlorophyll cells, and the cells of the cheeks and hands of mankind. A large book was once written on blue light as a medicine, and extravagant claims made for it; for example, water kept in a blue vial was claimed to be an excellent purge! I do not know about this, but I do know that it is a sensible thing to treat fatty ills with plenty of sunlight, unless it is too hot; and if people with fatty ills lived continuously out-of-doors I think they might prolong their lives. The heat that comes from sunlight is more refreshing than from other sources; it seems to quicken the circulation better, and that is what we are after. To impress the intense rapidity of vibrations of light let me say that violet rays are said to have three thousand millions vibrations per second, and that it takes seven years to count this sum at six thousand per hour, ten hours per day, and three hundred working days in a year!

While writing this I have a patient with fatty ills who says he gets great benefit from sunlight coming through blue glass. He sits in a box, head outside, and only the side in front admits light through a blue pane of glass. His nude body sweats profusely from the heat. This proves an increased circulation, activity, and motion of the sudorific glands. But light does not take the place of proper feeding.

A late writer states that light would not exist without eyes, or exists only in our eyes. I do not believe this, as I look on a green lawn illuminated by the sunlight. There are blind people, but their blindness does not put out the sun, which would shine if all eyes were extinguished forever.

A student once said he was determined to find out what electricity was, but I doubt if he succeeded, since no one understands the unseen essence or the effects it produces—light, heat, motion, emotions, chemical actions. The word is of Greek origin, meaning amber, because amber was first used to demonstrate electricity by friction; but amber is temporal, while the eternal fact, electricity, is invisible.

I think it is a safe thing to say that electricity is an ether and a mode of motion, like light and heat. It is not life, as some claim, because it is manifested by lifeless things coming together in unequal physical or chemical action; and though life has electrical manifestations, electrical manifestations are not life How electricity acts as a curative agent is a mystery; for instance, it is difficult to understand how electricity cures uterine fibroids; but this idea is impressed on me as I write, that possibly the wonderful varieties and adaptations of electricity may be useful as forms of motion in cases of fatty ills, where motions are impeded and retarded. My formula is as follows: *Life is made up of motions and emotions. Some diseases are caused by retarded or impeded motions. Electricity is a form of motion biologically penetrating Hence electricity is a remedy for some diseases.*

Electricity pervades like space; some even affirm its presence in water makes it a constitutent part of that element; but because a piece of copper and a piece of zinc touching each other produce electricity it does not necessarily follow that copper and zinc are made up of electricity.

As fatty degeneration of muscles is such a malevolent agent it is interesting to read that "the development of the muscles of the body, in a way other than by physical exercise, is made possible by the use of galvanism. A regular application of the electric current to any particular set of muscles in the body often results in their weight and strength increasing as much as forty per cent."

The kinds or forms of differentiations of medical electricity are. Static, Faradic, and Galvanic.

Doctor Robert Newman, of New York, the medical electrician, inventor of methods for electrolysis of urethral strictures, and a gentleman advanced in life, told me he had received the greatest benefit from static electricity It is easy to see that sparks drawn out from different parts of the body must make these parts interstitially move as to circulation and functions, and on this account I think favorably of this kind of electricity in fatty ills.

Faradic electricity, or the induced current, is the variety in general clinical use, but I have never been able to get much satisfaction from it. Twenty-five years ago the late lamented Doctor Louis Elsberg, of New York, whose learning in physics and physic was very great, affirmed that when electricity did good

twenty times, the faradic current did good once, and the galvanic nineteen times. Immediately I chose the latter, for life is too short to waste nineteen out of twenty chances to do good with electricity. I owe much to Doctor Elsberg for this dictum But it must be admitted the faradic is more popular, and an eminent electrician informed me he had to use it because patients were not satisfied unless they felt the current This evidences the man who desires to succeed as a physician must study human nature, and there should be a course of lectures on the ethics of handling cases. Nevertheless it is too bad the frailties of humanity should so interfere with its welfare that where nineteen cures should be had only one poor sufferer is relieved The history of clinical electricity would have been far better if galvanism had always replaced faradism! Again, Terry d'Etoille, in 1876, asserted that the faradic current does not influence the unstriped muscular fibers, but that the galvanic does. Althaus reports the faradic current induces fatty degeneration of the striped muscular fibers, and he gives a drawing of such fibers through which faradic currents have passed, whereby they have mostly been reduced to fat globules, with no semblance of their former structure. Faradism acts only through the nerves to contract muscles. The moral of all this is, Do not employ the faradic current in fatty ills.

Althaus also declares the galvanic current does not fattily degenerate the unstriped muscles, but strengthens them. Galvanism contracts muscles through the nerves, or, if

they are paralyzed, contracts the muscles without nerves! To repeat: where twenty cures occur by electricity, nineteen are due to galvanism; and acting on the foregoing principles, I use the galvanic current, and as yet have had no reason to be dissatisfied. The great objection, aside from its not being felt, is that alleged by those who have stood at the head of medical electricism, viz., that it has no power of penetration; but the facts are that in applying the positive pole—a gold needle—to a bony outgrowth in the meatus auditorius externus, the skin immediately assumes a deep red color that subsides on the removal of the electrodes; that when both electrodes are buried four to five inches deep in and through the abdominal walls, and a uterine fibroid and a voltameter is intercalated, the current traversing the tumor promptly sends the index needle to 1.70 volts; that in a like case of galvanism of a uterine fibroid the pulse would fall to eighty per minute when the plates were removed from the solution, and that the pulse would rise in one second to ninety when the plates were reimmersed; that Professor H. M. Field, M.D., of Dartmouth College, who witnessed the latter, emphatically remarked he knew of no agent in the materia medica that would so quickly raise the pulse as was done by galvanism. The facts related form the basis on which galvanism is recommended for fatty ills; and I am more inclined to do this, since the process of cell and tissue nutrition approaches galvanism in the minute movements of metabolism. Electricity must be present to all persons, since the frictions, motions,

and chemical actions of biology develop it; but some evince more animal electricity than others. The friction of winking my eyes in the dark produces flashes of light like a galvanic battery. Some think that electricity is everywhere present, hence the sparks that come from the body are the result of static electricity; others, that the earth is charged with it, from its intensely rapid motions of a thousand miles a minute in its orbit, and a thousand miles an hour on its axis, besides the intraterrestrial chemical actions, assisted by incandescent molten platinum, silver, gold, iron, and other metals making up the central mass of the globe. Be these things as they may, they do not annul the fact that galvanism clinically applied does quicken and promote arterial, capillary, and venous circulations, which operation is a good remedy for fatty ills, well worthy of trial, but not to take the place of proper feeding, which is a *sine qua non.*

A good mode of application is by baths. Neither is it necessary to have expensive electrodes. Silver spoons make good conductors, simply winding the connecting wires around the shaft, and if desired a sponge may be put in the bowl, held there by a silk thread. If a flat surface is sought, the handle of a tablespoon will furnish it. I usually employed my own batteries, on whose rods and connections I spent much thought. Galvanic action is easy to get, but the great difficulty is to control and keep it by good connections. The common screw and socket is not as good as the cam connection, for in the socket contact is tangential, while that of the cam is flat sur-

face to flat surface; also the fewer connections the better. Platinum foil makes the best connection because it is not acted upon by the current so much as other metals. Sometimes, with all care, a battery will not work, and one cannot tell where the trouble is, but if allowed to rest over night it will generally work again.

There have been many claims for electricity which could not be sustained, nevertheless it is an admirable agent, one whose therapeutic claims would hold better if it were not for the wordy and dogmatic assertions and commands of those who pose as "knowing all about it." I think I have a right to speak thus, as I too have been a pioneer and obtained, midst opposition if not reproach, results that have stood the world's tests for more than twenty years—results which were predicted to be impossible and postdicted as not having had an existence. From the close kinship of fatty and fibroid degenerations I am inclined to attribute the success of galvanism of uterine fibroids to the quickening and forwarding of the circulations, functions, and nutrition by the constant current, not excluding proper feeding nor the other auxiliaries named. I would recommend large plates for batteries, as giving less pain than the small ones, or in other words quantity in place of intensity. Small and multiple cells give more pain and are more caustic. It is undesirable to break down the tissues in chemical necrosis directly, but one should so stimulate the circulations that nutrition will go on, and cease to lay

down abnormal tissue, whether fatty or fibroid.*

Now regarding the use of galvanism in fatty ills: So far as possible it should be applied to the local lesion. For the heart, one electrode may be placed on the præcordium and the other on or under the back opposite.

---

*Some practical points about making batteries galvanic. Any two different substances on which chemicals act differently in degree, which decompose differently, will do for a battery. In my pupilage I made batteries from layers of oranges and lemons separated by bibulous paper; also from beef and mutton. A zinc and copper battery, such as I would call No. 1 and run with water, will decompose the same element. A good battery for fatty ills can be made of carbon and zinc plates, six by nine inches, with a glass tray or crock to set them in, so that they will not touch. Use a solution made of saturated bichromate potassic or sodic water, and add one part of sulphuric acid to ten of the solution. Connect wires with plates.—A good way to make connection with the carbons is to plate them with copper; the wire can be then easily soldered to the copper plating and covered with paraffin. I have suffered because the workmen bored holes in the carbon, and filled the same with lead or solder to which to attach the binding posts. It was a strong, nice-looking connection, but allowed little of the current to pass. It is well to have the cell shorter than the plates, as the connections are kept out of the solution, and there is less danger from the creeping of the salts My son, E. P. Cutter, has made a very light and good battery from arc-light carbons; a block of hard wood 3x4x2 inches, bored with holes near the edges, receives the carbons tightly, the tops of which are wound with copper wire, and soldered on for conductors; a stout copper wire is wound around the edge and fastened about the binding post at one end of the block, which makes a solid hold on the

—The silver tablespoons used as electrodes easily slip under the clothing. For Bright's disease of the kidneys, put one electrode over the abdomen to either side of the navel, and the other electrode over the loins. For apoplexy, one electrode over the nape of the neck, and the other on the top of the head; this should be used with care, but common sense will make easy the details of the applications; the more the quantity the better.

---

carbons, which are eight in number and six inches long; the zinc plate is 6x3x⅛ inches, and to its top is soldered a two-inch loop of copper wire whose ends run uppermost through the block, one being prolonged for connection; the cell is a glass bottle cut off at the top With such a battery carbon pole in vagina, and zinc pole on abdomen a myofibroid of the uterus, larger than a child's head was softened, reduced in size, and the uterine hæmorrhage entirely checked by a dozen applications of five minutes at night on going to bed.

A large battery that I term No. 3 has about thirteen square feet of surface, and measures twenty-seven amperes: it is employed for uterine fibroids by the electrodes being plunged through the abdominal walls and the peritoneum. This operation sometimes succeeds with from one to four applications, but it is so severe that few dare to do it. Battery No. 2 has carbons ¾x½x6 inches, zincs ¾x⅜x6 inches; the connections are strips of copper ½x⅛x2 inches long, which at the free ends are bent into a broad hook—as occurs in shaking hands. It is easy to separate the strips, polish them with sandpaper, and thus freshen their surfaces. The convex surface of the hook prevents the dust from readily entering the contact. The cell is made of sheet lead, which fits close for protection, and requires a new solution every time it is used for galvanic caustic.

These details may seem to be out of place, but they have cost the writer much time and thought and have been valuable to him.

Says Professor Tarchanoff, of St. Petersburg, who has been experimenting on the subject of music from a purely physiological standpoint: "It relieves muscular fatigue in man, helps to drive out carbonic acid in dogs and increases their consumption of oxygen and also makes them perspire." He thinks it may be regarded as a serious therapeutic agent. Now to apply this to fatty ills: Music is harmonious motion and causes forms of motion, invisible but sensible, as much as if they were visible. Severe toothache is an invisible painful emotion which has no weight nor color, does not occupy space, but sometimes causes motions of air that result in unpleasant sounds and has undoubtedly a real existence. Music is an enjoyable inspirational pursuit, whether listened to or performed. It affects emotions Emotions affect circulations and secretions. Bad music is not enjoyable, and is productive of depressing effects unhelpful to the fatty ill with retarded and impeded functions. The effect of inspirational and enjoyable music is to quicken the functions, especially the circulation, hence it acts as a remedial measure.

"I always get warm when I play the piano," said a lady. Major military music quickens the blood and emotionally stirs the courage of soldiers. The boy who whistles when going by a graveyard at midnight inspires his courage. Music tones up the sympathetic and cerebral nerve centers, and thus facilitates their work. My father, the late Benjamin Cutter, used to gently whistle to himself when he had a perplexing case to treat. Sailors sing when they do heavy work. The

soul is moved and then strengthened by music. A stirring, strong soul means better circulation of blood, lymph, and glandular secretions. Music revives the memory. There are some notable instances of this. Music is thought by some to promote longevity, and with good reason, since fatty ills, normal in old age, are dependent upon the flagging powers of life. Music should be expected to relieve those ills and thus keep off the infirmities of old age.

The Reverend Peter Kimball died at Perth Amboy, New Jersey, June 15th, 1892, and had he lived to March 5th, 1893, he would have been one hundred years old! I visited him about two months before death. He was a small, spare, bright, affable person with iron-gray hair, not bald, not overstrong, though he had life enough to drum with regulation drumsticks on a bag of sand while I sang "Hail Columbia," but as I did not sing it fast enough to suit him he sang a military march and drummed away merrily! He also played to me on the fife. He had drummed before the war of 1812! His memory was good for late and early dates. He could solve problems in cube root, and was more accurate as to his age than I was. He insisted that music was one reason of his longevity in the use of the fife for lungs, and drumsticks for heart; and I believe he was correct. Playing the fife pleasantly expands the chest, promotes the circulation of air in the lungs, hence gives more vitality to the body, and helps the retarded and impeded circulations; the drumsticks played, he said, would arrest the palpitations of the heart

when he was very ill therewith.—No doubt their music inspired him with its emotional force such as the heart needs at these crises, hence it is very probable he was right in his estimate of music and longevity, though there were other elements as remarkable: for instance, he had totally abstained from tea, coffee, and tobacco since 1830, and from rum since 1817! Had he been able to obtain proper food it seems as if he would have rounded out a full century of existence! There was a sad side to this centenarian; all but a few of his kin were dead; he was subject to petty annoyances and grievances, such as a cold, sunless room with a northern exposure; no bell or electric call; and he had other vexations which I in vain tried to relieve. But this does not blunt the point that music helped his longevity.*

In 1888 Professor Dogiel published at Kazan, Russia, his experiments as to the effect of music on the circulation: Dogs were made insensible and an artery laid bare, a platysmygraph then applied, and tracings made as by the sphygmograph; then other tracings were made during whistling and instrumental music, when the tracings presented heavier curves and markings. The same experiments were made on man by enclosing the right arm, forearm, and hand within a glass cylinder filled with water kept in by a tight rubber collar about the arm. By ingenious diaphragms arranged in conical receptacles the impulses of the heart upon the whole limb

---

*See "Music and Longevity," *Scientific American Supplement*, September 16th, 1894.

were conveyed to a tracing cylinder, before, during, and after the performance of music on clarinets, flutes, violins, and whistles. The results in the heavier lines and increased curves were the same as in the dog experiments. Until these results are upset by some one who has repeated them in like manner, I think they should be received as proof that the circulation is quickened and increased by musical sounds acting on the nerves and heart.

The relations of music and medicine have received considerable attention, and the literature thereof goes far back into antiquity and is greater than one would suppose. In evidence of this statement I refer to young David employed to play the harp to allay the madness of King Saul. In the "Haven of Health," published in London by a schoolteacher in 1579, music is put down as one of the remedies to be used to preserve health. The following extract is taken from "Dieta Literorum:"*

Quid Musica in excitandis ac diversimode formandis animi commotionibus; his valeat in aprico est. Haec mentem componit; curas et tristiti pellit; labores lenit; Spiritus recreat ac excitat.†

As evidence this subject is attracting attention, the fact may be cited that Canon

---

*An Inaugural Thesis read by John Rottenburger, January, 1724, Eighth Edition, 1729, Section III, Caput. III, page 25, under the head of Air for Literati.

†That music avails in exciting and in many ways forming (molding and controlling) the commotions of the soul is clear as sunlight. It composes the mind; it drives away cares and sadness; it lightens labors; it recreates and rouses the spirits.

Harford of Westminster Abbey has under his care a St. Cecilia's Guild which offers music as a medicine to the sick in London; and I have in my possession a letter in which he speaks of the good work already done. He uses female voices. It has seemed to me that, as voices would be difficult to be had on call at apothecaries, phonographs could be prescribed, and these would give the right lullabys correctly, would play softly, and could be carried about by unskilled hands with but little trouble and less expense than skilled voices. If this part of my subject *seems* unpractical, still it is an argument for those who have fatty ills coming on to make use of all musical opportunities, for there is no doubt that music directly and indirectly relieves the diseased conditions so often referred to here.

But it should be remembered that not all that is called music would be useful as a medicine. There is music and music; also the standard varies with the individual: For instance, the late James G. Blaine, who died of fatty degeneration, hired hand-organ men to play before his house daily during his illness; but if I were ill hand-organs would make me worse. The crooning of an Irish mother might soothe her own sick babe, but keep another one awake. Music played by artists, but with blaring horns drowning the strings of the orchestra, would be unsatisfactory. Canon Harford speaks of lullabys and anthems. I think that the *andante* and *andantino* movements of Beethoven's, Mozart's, and Haydn's trios for the piano, cello, and violin are the best classical music for

fatty ills. Such songs as "Annie Laurie," "Ye Banks and Braes of Bonnie Doon," "Those Evening Bells," and other soft, sweet, and low musical songs are to be selected. A fine music-box playing in the chamber of the sick is an easy way of testing the virtue of music for the ill; indeed, I would allow patients, if musical, to play on instruments of the violin class, the flute, etc. In walking cases, concerted music may well be utilized to accelerate the functions of their systems.

Though fatty ills can be caused by such medicines as phosphorus in massive doses, there are none I know of which can cure them. Medicines have been well termed the "oils" for the sick body machine, to make it "run smoother." So far as this goes they are to be regarded as curative by increasing the circulatory functions. Good vegetable tonics may be resorted to. I like the compound prescriptions, and make use of those made from fluid extracts, though they can be made from good tinctures; of course the physician should satisfy himself as to purity in either case. Here is one:

℞ Tincture cinchona compound, 3 ounces.
Tincture gentian, 12 drachms.
Tincture cardamom compound, 4 drachms.
Liquor Sedans (without sugar, P. D. & Co.), 3 ounces.

From half a teaspoonful to one teaspoonful in a little water at meals.

The above I have used as tonic in cases of fatty ills associated with pain; at my son's request Messrs. Parke, Davis & Co. made up the last item, composed of viburnum, dogwood, and hydrastis, without sugar and with

glycerin; it is better borne than the original liquor sedans..

Salicin is a splendid tonic, a good digestive and antifermentative; it checks diarrhœa usually. Strychnia, too, is a very valuable medicine.

But all of this matter of medicine must be determined by the special case. I could write much about Hoffmann's anodyne, sumbul, asafœtida, iodoform, pyrophosphate of iron, permanganate of potash, etc.; but the practitioner must work out the individual problems before him. Some cases require much medicine; others very little.

Regarding constipation: The laity like to push fruits and sweets to move their bowels, but the movements obtained in this way are at the expense of more or less intestinal fermentation, and are forced by an endeavor to get rid of gas and yeasts, while the constipation is caused by lack of nerve force. Feed the patient by good food and the nerve force will come back and the machine start again. The chemically pure sulphate of soda often acts well; also small doses of fluid extract of cascara sagrada; and some cases need enemata, though I am as a rule opposed to frequent washing of the bowel, as it depletes the body by siphoning from the small intestine the nutritive elements about to be absorbed; only when the patient's large intestine is full of yeasts is it well to wash out the bowel carefully, using some preparation, such as Euthymol, to kill the ferments. It is a good rule also to avoid apollinaris, soda, or other carbonic acid drinks, for carbonic acid gas is an agent which retards and impedes the func-

tions of the system by its direct and indirect paralyzing powers upon parts of the body near and remote. Olive oil and castor oil are not admissible because all fats promote fatty degeneration.

When there is no principle on which to give medicines, then none should be administered. Remember it is Nature who cures by her own powers of normal metabolism, transformation, transfiguration, or metamorphosis; that medicines *per se* do not cure anything. But if Nature furnishes the dynamic force, actual and potential, for them to work with, medicines may be of value.

Special obstacles should always be removed; that is, the obstacles that arise from peculiar constitutions and idiosyncrasies; complicating diseases and conditions should be obviated as much as possible. If there is constipation (excuse the repetition) it should be dealt with mildly, mildly, mildly, until the bowels are open. — If desired, proper proportions of rhubarb, cascara, or aloes may be added to the tonic aforesaid. There must be care in using salines for mild cathartics, as the trouble is that the fatty ill have generally too many salts in them anyhow, and it is unwise to add to the burden. The treatment should aim to reduce all the body systemic salts to their normal proportions, and thus avoid clogging. Massage and the laying on of hands will help constipation by conferring nerve force, a lack of which, in my judgment, is the great cause of constipation.

Again, all the blame because things do not go right must not be laid to the treatment,

because lapses and hindrances often come from overdoing in worry, work, or pleasure, which use up the vital force (*dynamis*) needed to run the body normally. Many cases are upset because some great irremediable cause of grief comes to bar out or mar success; and so far as possible the physician should try to avert such cause or causes. It is a good plan to make patients confidants, and make them understand the medical attendant is working sincerely and earnestly (without deceit) to remove their fatty lesions, and that their help is of vital importance. It does good sometimes to show patients the abnormal morphologies—*i.e.*, fatty epithelia, free oil, amyloid, and albumen. Physicians must be truthful, patient, persevering, firm, and labor in all ways to deserve and inspire mutual confidence. If the patients act as if their minds were reaching out or forth to some other treatment, it is best to settle this by pleasantly offering to relinquish the case.

Sometimes it is well to make patients sign an agreement to be faithful for a certain length of time, say six months or a year. It is not enough to restore a condition of health, but the course must be persevered in to confirm the body systemic in the new ways of normal life. While there is evolution in many things, I opine that the opposite, "devolution," is oftener met with in the practise of medicine; in other words, patients are more liable to retrograde than to advance (evolute); hence patients must be looked after and a good deal of hard work put into the conduct of their cases. Energy and per-

severance are required as a rule to honor the medical profession by securing the best results.

The time has come when there should be a better understanding of the way in which cures come. Call the processes of laying down and taking up tissues, which are all the time going on in every living human body (sick or well), metabolism, transformation, metamorphosis, translation, or anything else, nevertheless Nature is at the helm of all vital processes.

But what is Nature? some one may ask. The word comes from the Greek verb *gennao*, to be born; "genesis" has the same root, and means birth. It implies origin from some power not inherent in itself, as a child born certainly comes from and represents, however well or ill, its parents; the child could not exist had not those parents existed previously. In this era of the world it is consonant with time, names, and prevailing beliefs to assert that the power from which what is called Nature is nascent or born, is the Creator and Sustainer of the universe, "in whom we live and move and are."

Celsus has told us that the operations of Nature in medicine are like those exerted in agriculture and commerce. Physicians are wont to declare they have "cured" a case; but they should say, "We have changed things in obedience to the law of gravitation and medicine, which have righted the patient."

Nature in surgery is equally essential. Take a simple cut of the skin. All that

the surgeon does is to care for the cut, bring the edges together, keep it clean by dry absorbent cotton (if he chooses). Other things being equal the cut will heal through Nature's sending the leucocytes and pouring out the lymph, which she organizes into new connective tissues. This is no more wonderful than Nature's repairs of wounded plants and fruits; for it is an inherent law of Nature to heal wounds if she has the wherewithal to do it with. On the first phalanx of my right forefinger is a scar of a surgeon's cut made for a sore infected from a patient, which almost destroyed me by its systemic injuries. The wound gaped widely with thick edges, and the surgeon said it should be sutured. I said, "Let the edges alone, Nature will make them right;" and then I alluded to a case where Doctor Gilman Kimball, the veteran ovariotomist, sutured an abdomen that had been so enormously distended that large transverse folds of skin two inches high surmounted the vertical median line! Yet Nature smoothed down both cases as well as if they had been sutured to make all the edges meet.

In a fracture of a bone what more does the surgeon than to reduce it and retain in position, while the extraneous effused blood and the reunion of the fragments are restored by Nature's processes? Of course the surgeon or patient can spoil the healing; but I am dealing here with *good work* in surgery. In laparotomy for appendicitis the surgeon removes the offending body, but he depends entirely on Nature to do the healing when relieved from the offending part. If Nature

healed not, death would surely follow. Indeed the history of surgery tells of many a case where there was a splendid operation, after which the patient died from shock or poor constitution, which terms are but synonyms for the inability on the part of Nature to do her accustomed work. People have been disemboweled, their entrails trailed in the dust, and yet have recovered without antiseptics! Persons have been impaled on hay-forks. A man once had a crowbar blown through his skull and emerge through the crown, and yet recovery has followed. In such cases the conventional remark is that his constitution saved him. Surgical shock means that the constitution receives a blow, that may or may not be fatal, according to the nature of the individual resistance and reserve force. Independent of all surgery is Nature's power of recuperation. So, after all, Nature performs the cure in surgery.

The action of medicines depends on the condition of the system—*i.e.*, Nature's power. When I was young there used to be epidemics of dysentery and scarlet fever of a malignant type, and I have heard my father say the first cases were invariably the most severe and would not respond to drugs; even strong emetics would not act. This he attributed to the severity of the type of the disease, which exhausted the vitality so that it would not react to the influence of medicines any more than a dead lion to a kick. Sometimes this want of reaction is impossible to explain. I once saw in consultation a family vomiting from the eating of baked peas. After several hours' administration of medicines to arrest

emesis I suggested to the attending physician to give emetics and finish up the vomiting. They took the sulphate of zinc, kept it down, ceased to vomit, and all speedily recovered. I think it cannot be denied that Nature has the largest share in the cure of fatty ills.

I tell my pupils sometimes, "Attend to Mr. A—— or Miss B——, see that they have all needed care, and then forget all about them: let Nature do the rest." Introspective thoughts, making one's self a debating society, are very destructive of Nature's processes, and have slain when otherwise the lives might have been saved. I have witnessed worry bringing back oils and fats into the specimens after they had been removed by treatment, simply because worry reduced the vital forces.

Patients with fatty ills may present themselves so worn out as not to respond to the measures employed for relief. I have had some patients who appeared, in common parlance, "too far gone for any good," and yet they recovered because realizing their weakness and limited chances of recovery they have held on to the measures offered with no diversion of mind, no inside debating society, nor great overwhelming depression, which physicians cannot heal. *Per contra*, I once knew an ill wife's recovery to be upset by a knowledge of her husband's marital infidelity; this knowledge wasted so much force that Nature had no power to cure; when Nature could not hold her own, devolution wrecked the case. The relation of Nature to the cure of these fatty ills is as Air to Music. No air, no music.

As remarked before, the future of medicine will be curing disease by removing causes, such as bad foods; giving few foods on which the body will thrive; oiling the machine with hygiene, massage, medicines; conferring force by the *materia alimentaria* (Joseph Jones, M.D., LL.D.), and then Nature does the cure! On these principles I, from personal experience and the experience of others, am sure fatty ills are not incurable! One must not, however, sit down, fold his hands, and gracefully wait for death, but apply the principles I have tried to lay down, and try remedies as is done in recognized curable cases.

Here is a fine field for state medicine. Just as it is commanded to leave off contention before it is meddled with, so fatty ills can best be relieved by treatment beforehand (prophylaxis), by teaching people to avoid such ills by proper feeding.—A sapling is easier uprooted than a tree.

"For persistent albuminuria I agree "with Roberts and Rosenstein that we "have no remedy of the slightest value. "Nothing indicates more clearly our help- "lessness in controlling kidney metabolism "than our inability to meet this common "symptom."*

While respecting this dictum and those uttering it, I should testify falsely if I should say that I have not personally known cases of persistent (chronic) albuminuria, characterized by fatty epithelia, kidney casts, amyloid bodies, oil on blood slide, fat in leucocytes, to be cured by treatment.

* Osler's "Practice of Medicine," 1895, page 787.

VII.

SPECIAL AND PARTICULAR TREATMENT, WITH ILLUSTRATIVE CASES.

I have no quarrel with Doctors Osler, Roberts, and Rosenstein, but I have with their conclusions. I propose to offer evidence that in cases of persistent albuminuria, fatty epithelia, kidney casts, amyloid bodies, oil in the blood and urine, and fat in the leucocytes, such signs have disappeared, and the patients were permanently cured so long as they let causes alone.

I will first present collateral evidence.

Some years ago the Reverend J. C. Chickering, D.D., came to me in great distress about his eyes. Oculists had told him he had amaurosis, and that in order to postpone the inevitable blindness he should not preach any more. He asked if this could be avoided. The reply was that I disliked very much to go against the diagnosis, but thought if he would eat two-thirds by bulk of animal food to one-third of food from the vegetable kingdom he could preach and save his eyes from being worse. This advice was followed. He died at the age of seventy-eight, I think, of peritonitis. A short time before his death I saw him crossing Park Square, Boston, Massachusetts, crowded with street-cars, other conveyances, teams, and people. He was alone, caring for himself like any other person, and perfectly calm. He recognized me at a glance,

saying that he could see as well as he did in 1872; that he had preached right along, especially to the "spirits in prison" (Concord Reformatory) on the previous Sabbath!

In 1890 I visited my native town and overtook an old native on the sidewalk. As we proceeded together he remarked his oculist told him he was suffering from glaucoma and going to be totally blind; his vision troubled him very much, and he was disheartened. I told him that it was a case out of my line, but the result in the case of Doctor Chickering was so favorable I thought my plan was worth trying. In a few words I gave him the cue, and we parted. Two years later we met upon our native heath once more. He was much elated; said he followed my directions, and his eyes were improving all the time. I told him to hold on as he was doing. In June, 1896, I saw him again. Without speaking I made signs to test his sight, which proved to be good, and that too without glasses! He informed me his vision was about as good as it ever was, and that he was giving up the use of glasses entirely. His age was then seventy-two.

Some twenty years ago a mother lay sick under a complication of diseases, in which angina pectoris was a prominent feature. The attacks were almost daily, having the typical character so graphically described by Sir B. W. Richardson, of London.* She was

*The patient read this account lately and said it was a correct description of her case, saving the clause that asserted that all such cases died. As Sir Benjamin had entertained this lady at his house in London in 1889, I wrote him about it, re-

prostrate in bed, could not eat, and too weak to raise voice, hands, or head. The heart's area on percussion was larger than normal; the first sound presented a sonorous murmur heard towards the left; aortic sounds normal; impulse increased. The sense of constriction, suffocation and impending death was markedly characteristic, as if a giant gripped her chest. She was not expected to recover. Still, by carrying out the plans here laid down she made a good recovery, and now lives to bless her home with the sunshine of her presence!

Nearly two years ago a girl fourteen years old came under my care; she was larger than the average woman. She suffered mild attacks of catalepsy, that had persisted for more than a year, occurring frequently. She

---

ferring to Doctor S. Weir Mitchell and his already alluded to experiments in producing fatty degeneration of the eyes in guinea-pigs and frogs by the subcutaneous injection of sugar dissolved in water. Since Sir Benjamin has recently died of a masquerade of fatty degeneration of the brain (apoplexy), his reply is here appended:

"DEAR DOCTOR CUTTER—Your letter gave me great satisfaction, and I am much pleased to know that your patient no longer suffers from her old enemy. You seem to have an excellent memory to keep in mind so long my 'Synthesis of Cataract.'

"When you come to London again we shall be delighted to see you, and, with our kindest remembrances to your wife and yourself,

Believe me to be, yours faithfully,

B. W. RICHARDSON."

—Post-mark date, August 17th, 1896. He died November 21st, 1896.

presented free oil in blood; fat in leucocytes; albumen in urine, casts, fatty epithelia very marked; anteversion and flexion of the womb, and uterine and vaginal hyperæsthesia. Had been overworked at school. Catalepsy worse during menses. This case was treated on the plans for fatty degeneration; for the alleviation of the local troubles, with iodoform suppositories and vectores until the hyperæsthesia was relieved; then the flexion was straightened out and the lesion remedied by the judicious use of the uterine sound. In three months the catalepsy permanently disappeared, and along with it all signs of fatty transformation, save fatty epithelia, and these became very few in number, and there were very few fat globules. Surely it seems that there was some connection between the catalepsy and the fatty metabolism. The case is the more striking because there was a restoration of the bust of the chest, from its caved-in flatness and narrowed antero-posterior diameter of the thorax. There was no conventional bromide treatment, etc., by me. She had had enough of this and of conventional diet before. At last accounts (1897) she remained cured, save for a few oil globules in the blood.

I think that, as food causes were traceable in almost every case of epilepsy I have seen, it is reasonable to expect the cure of this malady to come through proper feeding. Epileptic disturbances of the sensory and motor nerve centers are met with in Bright's disease of the kidneys,—one of the worst cases of convulsions I ever saw was in a man

suffering from this nephritic lesion. Certainly this clue to the treatment of such lesions unamenable to drug medication is worthy of much thought by the clinician. I present a few cases:

Case 1.—This was a *petit mal*, but big enough to wreck the brilliant prospects of a young graduate collegian. His urine showed albumen, fatty epithelia, and kidney casts—not all at once, but at separate intervals. At times the abundance of the kidney casts exceeded any I had ever met. This case was much relieved, but the patient finally abandoned treatment on the advice of a physician who interfered because of tapeworm, and did not believe as I did. The case remains uncured.

Case 2.—Girl 13 years old, epileptic, with *le grand mal*. Albumen in urine very marked; casts and fatty epithelia. She was treated according to the plan heretofore laid down, but my instructions were carried out only with great difficulty because of absence of mental control of appetite, a defect that discouraged her friends (she was an orphan), and her case would have been given up but for the persistence of the physician. For example, in spite of all warnings, she drank molasses from the jug, as if it were water, thus upsetting her treatment. With every upset the albumen, casts and fatty epithelia would reappear. Finally a promise of a nice white dress prevailed, and she tided over into such good health as availed to maintain proper psychic control. The albumen disappeared last; the casts and fatty epithelia went first. I saw her people some years after her treatment, and they reported her in splendid health. All concerned were much gratified with the outcome, and well they

might be. At this writing (1897) she continues well.

Case 3.—Middle-aged man; *le grand mal;* presented all the stigmata of fatty degeneration, though not to excess; a bad case with no self-control. He would deliberately eat forbidden food and revive his epileptic seizures, and at such times he would emphatically deny having eaten anything amiss, though the morphologies of the blood, urine and sputum furnished ample evidence of his dereliction, aside from the macroscopic evidence furnished by his seizures. A peculiarity in this case was the existence of an abundant mycelial vegetation in his mouth that lined it white, and exhaled a perfume not celestial, and bad enough to knock you down if you came within reach. This case was a failure, because the right morals could not be inspired.

I herewith also present histories of other cases of fatty degeneration:

Case 1.—Four years ago an eminent surgeon was ill with chronic and acute bronchitis, asthmatic variety, and with albumen, fatty epithelia and casts in the urine. His sputum had for a long time been loaded with granular massive and crystalline gravels; also with blue, bronze and emerald-green pigments. His blood showed free oil, fat in white corpuscles, and emerald-green pigments; he was ill in bed for several months, and was treated partially on the plans here laid down,—I say partially, as, being a great favorite in the profession, he had plenty of fraternal medical advice and attention shown him, and could not but yield to their kindnesses. Still he made a good recovery, and is to-day practising in his office comparatively well at his advanced age of seventy-six! Says

his urine is normal. It should be added, as further showing the character of his disease, that after his sickness he developed cataract, which has been successfully removed by surgery.

Case 2.—Some ten years ago an eminent clergyman, 64 years old, overworked as treasurer of a large missionary society, was examined because of what he believed to be "rheumatic and neuralgic pains" in back and limbs. In his blood were found: Free oil, and fat in white corpuscles; emerald-green and bronze pigments; red corpuscles somewhat adhesive; rarely massive fibrin filaments. The urine, studied two or three times a week for several years, showed albumen, casts, fatty epithelia, protoplasmic and filamentous catarrh, and amyloid. These abnormalities were not always present together nor in large quantities, still they were positive and sufficient to class the case under this head. Diagnosis of rheumatism not sustained; the pains were neurasthenic, locomotor ataxic, and from partial paralysis.—They were Nature's warning to "look out for the engine when the bell rings," and this engine I now think was locomotor ataxia; in other words, he was in the pre-stages of locomotor ataxia. The dominie used to do two men's duties, kept at work during this illness, and did not lose a day, while others in his office calling themselves well were off on vacations, or on account of poor health. Finally his left shin was injured by striking against an open drawer of his office desk, and though it was apparently a slight affair it caused more trouble than it ought, as injuries which in health would not be noticed become grave in cases of fatty ills.—For example, the late Doctor Elsberg had his instep pinched by a tight boot, and it became the immediate cause of his death. This was because of the systemic

weakness caused by the fatty metabolism. However, this case made a good recovery from his barked shin, though much against his will he had to go to bed on account of it. He was under treatment for some years, but was termed a "juicy old man" because of his splendid business abilities, literary attainments, and true, harmless, spontaneously bubbling mother wit. We could never get him closely down to business medically, right along, and when he did yield obedience the abnormal morphologies would disappear, and he would feel nicely. At the last examination his urine was slightly albuminous. Under the circumstances the success attained was splendid.

Case 3.—A young man 18 years old, with all the stigmata of fatty ills, was brought to me by his father; the mother was ignored, but I asked that she come and see me, as I felt she, of all connected with the case, should consent to it and understand the plans, because her business was to see to the food of the family. The father said, "I will see she carries out all your directions." Nevertheless the mother gave her son things to eat as she thought best; upset her husband, doctor, and son. Mothers who have for many years selected and prepared food for families come to feel that they know all about dietetics; and I still think if I could have seen this lady and explained matters the boy could have been saved.

Case 4.—About ten years ago a middle-aged widow consulted me, suffering from a complication of diseases, with a systemic condition of fatty and fibrous degeneration; had been sick a long while, and I was her last medical hope. There was oil in blood, fat in leucocytes, albumen, fatty epithelia and amyloid in urine; a sessile fibroid large

as the fist at the fundus of the uterus, and anteversion; gravels in sputum; asthma; pleuritis, etc. She was put on the plans here outlined. In two months the first four symptoms disappeared. Though now a valetudinarian, she lived in comparative good health and activity. This case shows the wonders of food as a medical power.

Case 5.—About nine years ago the son of the above widow came under treatment for nervous prostration. Unable to study, he was fearful of giving up his class on this account. I found in his urine protoplasmic, filamentous and Indian club catarrh, albumen, cylinders, and fatty epithelia. The blood was not much out of normal condition. By following the usual line of treatment he was cured, and the abnormal stigmata removed; he is now (in 1897) hard at work as a civil engineer and poultry farmer.

Case 6.—About two years since a clergyman came under my charge for diabetes, as diagnosed by five other physicians. There was confirmation of diabetes mellitus with detection of albumen, cylinders, and fatty epithelia in urine. In a few months the albumen, cylinders and fatty epithelia disappeared; in a year the sugar also disappeared, and has since remained absent. The gentleman's health is fine, and he is hard at work at his professional duties in the Episcopal Church. In 1896 he spent a summer vacation in Europe.

Case 7.—Some six years ago a middle-aged, tall, lean, pale and wan business man, a great sufferer from insomnia, neurasthenia and prostration, applied to my son for aid. He was found with protoplasmic, filamentous and Indian club catarrh, albumen and casts in the urine. He cooperated faithfully with the treatment, and is now able to sleep; his

abnormal morphologies have also disappeared, and at last accounts he was a well man. This instance is the more remarkable because this combination is a very hard one to cure. The lack of vital *dynamis* interferes with the carrying out of treatment which takes time and trouble.*

Case 8.—Three years ago a lady who had chronic diarrhœa, or consumption of the bowels, for the space of twenty years, came for treatment. She presented the following evidences of fatty degeneration: Free oil in fæces; ditto in blood, fat in white blood-corpuscles; emerald-green pigments in blood; albumen, casts and fatty epithelia in urine. On the general principle of removing fermenting food, the consumption of the bowels was cured by Nature. The signs of fatty degeneration held on longer, but she is now in the enjoyment of perfect health. This record came from her fidelity, maintained under strong resistance from the outside. In the day of judgment the Lord will reward according to fidelity, not according to immediate outward results; but does not the case show the same principle of Nature in dealing with the biology of the human body?

Case 9.—Twelve years ago a man was found with protoplasmic and filamentous catarrh, albumen, fatty epithelia, and cylinders in urine. He was under great stress of mind and body, but under treatment improved and passed out of observation until about two years ago, when he was reported as having had an apoplectic attack, partially paralyzing one side of his body,—he was over seventy years of age. From the apoplectic shock he made a good recovery.

---

*Unless specified to the contrary all the cases here are mine.

Most of the time he has been careful of his diet on the lines here laid down, but not being under medical inspection he probably wavered from it somewhat. The hemiplegia seems to prove that the degeneration had affected the muscular coats of the cerebral arteries; but his fine condition at the age of seventy-four, when fatty ills are normal, to use a Hibernicism, is certainly good evidence of the truth of the doctrines here laid down. Medically speaking, there is more devolution than evolution; that is, patients left to themselves naturally tend to a lower standard for themselves when they have no expert to coach them medically. The principle shown in this case is that by stopping causes, sustaining Nature, and oiling the machine therapeutically fatty degenerations will disappear if given half a chance so to do.

Case 10.—Professor Louis Elsberg, M.D., about ten years ago undertook the line of treatment here laid down for albumen, casts, and fatty epithelia in the urine, and for oil in blood and fat in white blood-corpuscles; his appearance was waxy and lardaceous. In a few months these abnormal signs were gone, and he was pronounced well. Then he said, "I am now going to eat anything I like!" These words cut me to the heart, for he was my beloved friend. I knew he had uttered his death warrant. No words of mine availed to change his purpose, and he decided to live to eat, not eat to live. Of course I could take no more responsibility after this! The next I knew of him he had a very bad sore foot, the trouble being caused by wearing a pair of new tight boots. I examined the lesion, but it was so trifling it did not appear to sustain his assertions and asservations of its great painfulness. But he was right. He was again in the toils of systemic fatty degeneration, and unable to resist

a small injury like this! The foot never got well. Unwisely he worked hard, doing, in addition to his own duties, the labor of a professor of a post-graduate clinic, who disappeared at that time and never returned; exposed himself to inclement weather, and fell ill with bronchitis and pneumonitis. All the earnest, faithful, multifarious efforts, lovingly and persistently rendered by many physicians, availed nothing, simply because his fattily degenerated tissues had not force enough to resist disease and react to stimulants and tonics. He died much lamented, as he was a very eminent physician, a wholesouled man, and of rare philosophical character. Oh, if he could have adhered to his diet he would have continued to bless my life with his soulful richness! *Eheu fugaces!*

Case 11.—A millionaire of 72 years was treated on these plans for albumen, fatty epithelia and casts in his urine; for oil in the blood and in the leucocytes; for apoplexy of the skin,—*i.e.*, rupture of the small dermal arteries so that he was marked all over his body with stellated blood-spots ecchymosed under the integument. He had arcus senilis and difficult vision; also alcoholism. By close and careful attention the stigmata of fatty degeneration were removed so that he was called well; but it seems that he resorted to domiciliary tippling to a large extent, which upset all care and treatment, as naturally might be expected. He did not live long after I was dispensed with, though he had plenty of attentive physicians, who understood not his case. They believed not at all in the idea that fattily degenerated tissues can be restored if the causes are stopped, the machine oiled, and Nature thoroughly sustained. This is history, not mere complaint, for the professional gentlemen acted up to their knowledge and convictions. Under the

alcoholic environment, which was kept secret for a long time, it is a wonder that the man fared as well as he did. I think this case shows something of the relations of alcoholism to fatty ills.

Case 12.—The wife of the patient in Case 11, a nice, corpulent old lady, presented the macroscopic and microscopic signs of fatty degeneration without alcoholism or dermal apoplexy; but she had very troublesome epistaxis, which the rotten condition of her blood-vessels made it difficult to arrest in the spongy tissues of the nose. She was a kind, good old soul, and did the best she could. Much distressed about her husband's alcoholism and illness, she could not check it. Still she improved somewhat in health on the plans here laid down, but the loss of vital force from worry strain and disappointment served to block her course. She lived but a short time after her husband dismissed me.

Case 13.—Mrs. E. D——, 45 years of age, asthmatic for twenty-six years previously, had anteversion of the uterus, and presented fatty epithelia, casts and albumen in urine. She was treated specially for her asthma, which in two years was permanently cured; along with it went the fatty epithelia, casts, and albumen. She was restored to fair health, when she felt that her wardrobe should be completed by a full-length sealskin cloak. While traveling for this purpose she took cold from exposure and weariness. She had a peculiar sickness, in which cerebral symptoms predominated. Delirious and fatuous, she died.

Case 14.—Judge ——, 63 years old, had been attended by eminent medical talent, that made an agnostic diagnosis, so far as the patient was concerned. There was albumen with fatty epithelia and casts in the

urine; in the blood oil, and fat in the leucocytes. Heart's impulse and area of dulness on percussion increased; sounds muffled and distant; no valvular lesion. The patient was large and fleshy, weighing over two hundred pounds. When the diagnosis was made and reported to him, it was met with the statement that his physician had told him there was no cardiac disease nor anything the matter with the urine, especially no albumen; but tests made in his presence proved the contrary. When the urine was referred back to the collegiate expert the presence of albumen was admitted, and not before. He improved under treatment, but all the while was consulting and hobnobbing with the physicians who had made the aforesaid diagnosis without any hope of a cure. The effect of this cross-purpose work was bad: he gave up the treatment here laid down, and died as his physicians said he would die; thus proving the correctness of their prognosis and the futility of efforts to cure, when one physician is pulling one way and the others another! Such doings spoil chances. These things are said, as before, by way of history, and not of censure; the history of all advances in knowledge is filled with like instances. Only it seems like a dog-in-the-manger business, where there is a most valuable human life to be saved.

Case 15.—Four or five years ago a very anxious and nervous wife of middle age came to me for an induration in her right breast. It had been pronounced cancer by a good surgeon, who recommended amputation. It appeared to be a fibroma. Treated on the plans of nutrition here laid down, it departed in a few months. During this time, when she had her nerves quieted by the good progress of what she called her "cancer case," she turned her attention to her husband, who was

apparently quite well and attending to a large business. She insisted on his being examined, and her fears were realized by the discovery of free oil in the blood, fat in white corpuscles with albumen, casts; fatty epithelia, with protoplasmic and filamentous catarrh, in the urine. He was readily cured, and remained so at last accounts.

Case 16.—Twelve years ago a multi-millionaire was treated for fatty degeneration of the kidneys, as evidenced by albumen, casts, and fatty epithelia in the urine; was troubled more by hebetude than anything else. He once said to his physician he thought he would hire a man to go behind him with a horsewhip, with orders to flog when he *flagged.*—This must have been on the principle of conferring force by impacts! I told him his tissues were turning into fat and the whip would only waste them more. In a few months all the insignia of fatty metabolism had disappeared, when he declared from motives of economy (!) he would run his case himself alone. He did so, and in a few months literally ran it and himself under the ground! It is not enough to obtain the evidence of health in the body systemic, but this condition must be maintained until the tissues are strong enough not to devolute. Generally speaking, a fatty-ill case should be under medical attendance for six months or longer.—Destroying is easier than building up. This gentleman was over 70 years of age, an extremely hard worker, and unused to consider himself as entitled to any special consideration of rest as to mental and physical labor.

Case 17.—A single lady, like the wife of Case 15, with tumors of the breast, which a "cancer doctor" pronounced malignant and only removable by caustic paste, was put on treatment, and her condition made a special

study for a long time,—the usual signs of fatty degeneration were found in the blood and urine, though not marked. As time went on the stigmata disappeared along with the tumors, and she is now quite well.

Case 18.—Sister of Case 17, with like stigmata, but with more signs of alienation, occasionally presented fat in blood, albumen, fatty epithelia, and casts in urine, which evidenced she was skirmishing with a masquerade of fatty degeneration. At the present time she is much better and well-nigh free from the ominous signs. During treatment it was sometimes difficult to keep her strictly to the diet, but the closer she kept the more the insignia were absent.

Case 19.—In 1876 one of the most eminent pedagogues in the world was in the pre-stage of tuberculosis of the lungs. He was cured, and in 1879 went to Japan, seriously charged, in case he was ill, what diet to follow, no matter what physician he had. In 1881 I received a letter from an American physician residing in Tokio, stating that Professor —— had Bright's disease of the kidneys (diagnosis confirmed by the German professor who was at the head of the medical department of the University of Tokio); that they could not get him to eat anything but what I had told him to eat; that however good the diet might be for America it would kill him in Japan; and that they wished I would order him to feed as they desired. I wrote to them that if they changed his diet he would die, and that I wished them to let him alone as to food. They did so. He lived to June, 1893, in the enjoyment of good health, save when he would eat too much carbohydrate food. For example, in 1893 he taught in a school in Michigan, where he worked very hard, ate all the "goodies" they gave him, though he

knew better. His kidney degeneration returned in full force, with all the stigmata, but a few months of going back to prescribed diet restored him again. But death finally overtook him in a way of psychological depression, which it is refreshing to contemplate in these days when so many think that "marriage is a failure!" The beloved wife of his youth died seventy days before him, and he took her death literally "to heart;" besides, he exposed himself to the inclemencies of the weather, took cold, and his disease settled on his heart, which manifested the signs of inflammation and pericardial effusion. He meantime attended to his professional duties, planning for future work as if a young man! As expected, the heart suddenly ceased to beat. At the time of his death his head was covered with iron-gray hair; he could see without glasses; his hand was steady; mind clear; and he had just completed a plan for a new system of pedagogy in music!

Cases 20 and 21.—During the absence of Case 19 in Japan, his wife and daughter were both ill, and examination revealed albumen, casts, and fatty epithelia in the urine. Both were cured.*

Case 22.—About eighteen months ago a girl of 20 came under care for consumption; besides the evidence of this disease she pre-

---

*I did not see Mrs. —— at the time of her death, and therefore cannot speak from personal observation. I was informed by Professor —— that her physician got her daughter to boil her urine in a teaspoon and report to him whether it was changed or not! Comment is needless; but I would ask, was this procedure worthy of the professional honor and dignity of this shirking attendant? Was it not shystering? I hope none of my readers will ever be guilty of such remissness and shiftlessness.

sented fatty epithelia, casts, and albumen in urine, oil in blood, and fat in leucocytes; vaginal and uterine hyperæsthesia; high systemic fever during the after part of the day, though there were detected but very few lung fibers in the sputum. On adopting the usual treatment the urinary stigmata disappeared, but not the oil and fat from the blood morphology. The lungs healed; the lung fiber disappeared from sputum. The fever kept up, and because of this the treatment was abandoned! Still it was good to have checked the fat metabolism under such difficult environments. I am now inclined to think that the degeneration was a prime element in the production of the diurnal fever, which fever I regard as a result of Nature's efforts to rid the body of intruders.

Case 23.—Some thirteen months since a lady of 60 came under my care for rheumatism and anchylosis of the right shoulder-joint; for want of power in the knee-joints; for inability to raise herself in bed and to go up stairs alone. Locomotor ataxia was thought of, and perhaps it was present; indeed, I now think she was in the pre-locomotor ataxic state; but the presence in the blood of oil, fat in leucocytes, amyloid, emerald green, bronze, and other colored pigments; in the urine of amyloid bodies, fatty epithelia, casts, albumen; in the fæces of free oil,—all pointed to a systemic condition of fatty degeneration. One year's treatment sufficed to remove all the stigmata except very slight albumen and occasional fatty epithelia. The anchylosis and pains disappeared, and locomotion was restored. It should be said that she was an admirable patient, obedient, faithful, calm, and single-minded; she saved all her forces to use for recovery; also she was blessed with a beautiful, ruddy, grown-up daughter, who faithfully ministered to her wants and

imparted dynamic force to her physically and psychologically, with great advantage.

Case 24.—I was suddenly summoned to a man 65 years old under treatment for chronic Bright's disease of the kidneys, as evidenced by the urinary and blood morphologies, and found him in convulsions which were exactly such as are seen in puerperal cases; he could swallow nothing and was unconscious, so chloroform was applied to the nape of the neck as follows: A small pledget of cotton was moistened therewith, placed on the nape and held there by placing against it the bottom of a glass goblet; the heat of the body evaporated the chloroform, and in a few minutes erythema and almost blistering followed,—the action was quick, sharp, and painful. Signs of consciousness appeared, and soon he was able to converse. The convulsions did not reappear. Afterwards there was some improvement as to the stigmata of his degeneration; but later they devoluted and he died. It should be said that this man suffered a great loss of force from the recent death of his wife and terrible sickness of a favorite daughter; this withdrawal deprived Nature of much-needed dynamis. Nature cannot run a steam-engine unless water is conveyed into vapor.

Case 25.—A man 65 years old, presented in 1890 all the evidences of Bright's disease of the kidneys: The albumen was copious; upper eyelids swollen; mind appeared to be affected, as he would not listen to the reasonable entreaties of his noble wife, but insisted that there was nothing the matter with him save weakness; had no pain; said he felt well enough. He would not follow directions. He was reaching out for other aid and dispensed with me, saying that he would be best cured by massage without

diet and medicine. I was informed that he died two months later.*

Case 26.—A girl of 13 had scarlet fever and her first menses appeared at the same time,—in fact the rash came out and the menses appeared the same day. Albumen, casts, and fatty epithelia were present in the urine. She was put on treatment and got well through with the various phases of the scarlatina, but the urinary morphology persisted for six months before it disappeared. This was twelve or fourteen years ago, and the girl subsequently developed into a beautiful and healthy woman.†

---

*Pain would have been a good thing for this case. He would have appreciated his situation better. I am not at all sure but that the conventional idea of the medical profession is somewhat responsible for such misapprehensions. That is, the idea of relief from pain is held so prominently forth that some come to believe in the delusion "no pain, no disease!" Often opium is given for relief, and when the pain is relieved the work is said to be done. But pain is not the disease; it is rather a result of disease. The same is true of fever. Remove the causes and both pain and fever will disappear. Let me not be misunderstood. There are cases when agony must be relieved by narcotics and anodynes; but this must be done after some consideration and not perfunctorily in a routine way. It should also be said that the removal of pain stops the leaks of dynamis so that sometimes Nature has force enough saved to cure. But we are treating of chronic and not acute diseases and insist on the removal of causes as a prime necessity.

†This combination is a rare one. She was sister of the patient noted under puerperal convulsions. She had lived largely on carbohydrates, which was the cause of her illness, which at one time was so serious as to excite the most grave apprehension.

Case 27.—A retired locomotive engineer, 60 years old, in January, 1896, was confined to his bed with an enlarged and valvularly diseased heart, dropsy of limbs, albuminuria, and given up as incurable. In this state he was seen by a relative who had been in a like condition and successfully treated by my son, Doctor John A. Cutter. Layman-like, he prescribed hot water, beef, and dandelion root extract. In one week the man was at his work! Later he was under my care, and I found albumen, casts, fatty epithelia in the urine, and oil in the blood, with fat in the leucocytes. He improved, but, exposing himself to cold and wet on a steamboat excursion, contracted acute bronchitis of a severe type. His brother, a physician, naturally was called in to see him, and his prognosis was fatal; he said it was of no use for him to try to get well; advised him to go into the country and live as long as he could. He went. The uncle says that he received a letter from him dated November 12th, 1896, in which he writes: "I have been sitting in a chair since the 5th of June, unable to help myself; cannot lie down; . . . my body is nothing but skin and bones, which up to the first of September was filled with water as big as a barrel. My legs are like a piece of raw beef with, I think, a thousand holes in them, which I cannot compare with anything but a nose on a sprinkling pot, discharging from two to three gallons of water every day. . . . The smell of the discharge is terrible, but I think I am gaining a little, for I can stand on my feet with a little help. . . . I have had several doctors, but they could not do anything for me." He later died.

It is a pity that this patient could not have adhered to the treatment laid down, especially as he exhibited such a wonderful vi-

tality. It is not the writer's fault, as treatment was offered gratuitously. He threw away all his chances.

Case 28.—Mrs. ——, aged 45, in 1892 was taken so ill she was disabled from work. Her sickness was attributed to defective house plumbing, that allowed sewer-gas to escape and permeate her apartments, and she removed at once. Her urine presented albumen, casts, fatty epithelia, which latter were very abundant and characteristic; indeed they appeared like vaginal epithelia when vaselin has been used to facilitate a digital examination. There was loss of appetite, fever, prostration, and weakness. The fatty epithelia held on longer than the casts or albumen. But by following persistently the means here recommended she recovered in a few months and has been well ever since. She has developed a great decision of character, manifesting strength, energy and promptness of action in an emergency that most wives succumb to without any resistance. Fatty tissues do not confer force, they are at once the cause and substance of weakness of muscular and nervous tissues.

Case 29.—Some four or five years ago a middle-aged wife came under my care. She had an enlarged heart with muffled normal sounds, combined with dyspnœa on going up ascents, and sometimes with severe attacks of palpitation; cerebration somewhat dazed; was bothered about remembering things, and about calling things by their right names, although she managed to maintain well her position as mother of a family and housekeeper; there was some uterine disturbance. She was found with the signs of fatty degeneration in the urine and blood. Treated on the principles here laid down she made a good recovery, which has continued up to

this writing (1897). As she got better it was interesting to note the improvement in her cerebration, her movements, her facility of speech, and her appreciation of the change. She once stated she knew if she did not get better she would have become insane; but she did not realize the truth of this so much at the time as she did afterwards. Hind thought is surer than forethought.

Case 30.—In 1882 Mr. S——, a salesman in one of the largest Boston shoe houses, applied to an insurance company for a policy on his own life. The medical examiner said he had Bright's disease of the kidneys, and advised him to do no more about it. The father-in-law of this gentleman, a medical man, satisfied himself of the truth of the diagnosis, and treated him without success; other physicians made the same diagnosis and treated him. The same year the gentleman was brought to me, and physical exploration revealed albumen, fatty epithelia, casts, and sometimes amyloid in urine; oil in blood and fat in leucocytes. These signs were marked and pronounced. He was put on strict treatment, which was followed for two years, when he was discharged cured. In 1895 he applied to the same company for a policy of life insurance, and it was granted. During all his treatment Mr. S—— kept at his business and is at it now (1897).

Case 31.—Two years ago a clergyman 35 years old applied for aid. His appearance evidenced locomotor ataxia, and his urine displayed albumen, casts, fatty epithelia; blood manifested oil; fat in leucocytes; red blood-corpuscles sticky, adhesive, and rotten. After returning to his home in the distant South he assumed the treatment, and the care of two churches! It was only with much difficulty he could carry out the directions given because of impossibility to get

good beef; still he persevered, and the casts and fatty epithelia were removed from the urine, though traces of albumen remained; locomotion did not much improve. He afterwards went to an osteopathic hospital, where he kept up the diet, and reported himself much benefited by the manipulations called by this bony name. A month ago he came to New York to study lip reading, but here he failed to keep to his diet. Locomotion was much worse than when he was here first. If this man could be induced to do less with his weak and enfeebled body his chances would be much improved.

Case 32.—Captain ——, 60 years old, veteran of the war of 1861, alcoholist; legs and belly swelled; in 1894 he showed oil in blood, fat in leucocytes, albumen, casts, and fatty epithelia in urine; red and white corpuscles in copious clots, filamentous protoplasmic catarrh, uric acid, and calculi occasionally; complained a good deal of rheumatic pains, which were probably neurasthenic from the urinary catarrh, since his blood did not have the morphology of rheumatic blood. At one time he was treated by a "wonderful" spring water, containing 232 grains of saline matters to the gallon, and in the advertisements of this water Captain —— was gazetted as a wonderful cure, because he kept voiding many calculi! Note.—Those who drink nearly half an ounce of mineral saline matters to the gallon, especially when their systems are loaded with salts beforehand, must expect to void calculi in their urine. My son took away alcohol and put him on treatment along with the use of distilled waters. After a time he voided no calculi, and the evidences of fatty degeneration disappeared; he still keeps well except when he indulges in alcohol. This shows the tendency of this carbohydrate to produce fatty degeneration at least in this

case. Captain —— enjoys his new lease of life, and says he is in feelings as young as ever.

Case 33.—October 3d, 1896, I saw Miss D——, dressmaker, a fine, tall lady 35 years old. She was not seen then for the first time. In February, 1896, she had cavernous respiration, dulness on percussion, coarse sibilant râles over the right upper third front of chest. Her blood presented marked fibrin filaments; red corpuscles sticky, adhesive, massed; vinegar yeast, oil; fat in leucocytes. In sputum were granular massive crystalline and encysted gravel, with inelastic lung fibers. Cough incessant and harassing; loss of flesh and strength. On these data a diagnosis was made of tuberculous cavity of the right lung with systemic fatty degeneration. Under treatment her cough had entirely disappeared before October 3d; no lung fibers, but some granular gravel yet to be detected in sputum; blood normal save for some oil, and a few leucocytes containing fat Respiration normal; some dulness on percussion, over right upper third front; no râles, and no cavernous respiration. This was a truly faithful patient, and it was the third time her lungs had broken down and healed. Certainly she is an example of the wonders of dietetics.

Case 34.—A man 57 years old was found with albumen, casts, and fatty epithelia in the urine, fat in leucocytes, and oil in blood. He went partially on the diet in 1889. When he came to me he had the morphology of catarrhal urine with occasional traces of albumen, false and true casts, and fatty epithelia. If he could be induced to live strictly according to rule he would, I think, other things being equal, recover.

Case 35.—A young married man three years

ago came under my charge for diabetes mellitus and Bright's disease. Besides sugar his urine revealed albumen, casts, and fatty epithelia, and his blood oil and fatty leucocytes; also complete dulness on percussion, from the lower edge of the right thorax to the level of the nipple, in front and behind to the angle of the scapula. The continuity of the hepatic dulness, the absence of respiratory vesicular murmurs, the want of intercostal normal fulness, the absence of complete flatness on percussion, rendered the conclusion inevitable that the liver was enormously hypertrophied. By special care the evidences of fatty ills soon disappeared; the sugar diminished to one-fifth of its bulk and hung there for three months; finally, after remaining at one-sixteenth bulk, the sugar entirely disappeared for a short time, and the hepatic dulness then became normal; the respiratory murmurs were heard where there had been hepatic dulness.

I am sorry to add that this case could not be induced to adhere to the diet; on his own responsibility went to Colorado to spend the winter, took cold there, and died suddenly.

To me the history of the foregoing case is wonderful and well-nigh miraculous. That a double gland of such a complicated dense fibrous structure, so enormously enlarged, should be reduced at all, justifies me in placing this case among the wonders of food effects. It is possible that none of us sufficiently realize what wonderful things can be done with the diseased human body by the simple agencies which Nature employs to cure when one is governed by the dictates of common sense and sound judgment. I should not have believed this history had I not critically studied the case.

Case 36.—In January, 1896, Mrs. S—— bore a babe, and after confinement was blind in the left eye. Doctor W. F. Holcombe, of New York (said to be the first to use the ophthalmoscope in America, and to occupy a chair of ophthalmology here), explored the eye and found retinal apoplexy with dropsical effusion. Tracing it out he found albumen in the urine, and treated the lady on the principles I have laid down. By his kindness I saw the patient when her child was about three months old. The ophthalmoscope revealed the dropsical effusion to be absorbed and the fibrinous clot lying on the retina. The microscope revealed oil in the blood and fatty leucocytes, fatty epithelia and casts in urine, which was also albuminous. The vision was partly restored. In December, 1896, Doctor Holcombe told me her vision was normal. In the light of conventional treatment, this case is also one of the wonders of dietetics. Such instances should be so common as to cease to be wonderful.

Case 37.—Miss ——, aged 55, had when a young woman all the physical signs of tuberculosis of the lungs. She was cured by diet and remained so until two or three years ago, when, after losses of property, with sickness and death in her family, she found herself a lone single woman in her own house. Within a year she came under my charge again with Bright's disease of the lungs. There was dulness on percussion, cavernous respiration, pectoriloquy, emaciation, lung fibers in sputum; albumen, casts, and fatty epithelia in urine; blood did not reveal the morphology of tuberculosis. February, 1896, her oculist reported her eyes had been so poorly nourished that the vitreous bodies were fluid, or partially fluid, and filled with minute opaque spots; a little astigmatism and presbyopia. He prescribed reading glasses, but no other local treatment. The degener-

ation was dependent upon her general health becoming better or worse,—this is best explained by systemic fatty degeneration. While under treatment her eyesight improved, as did also the physical signs except the albumen. Cough continued, but no lung fibers were found in the expectoration. She died in November, 1896. There was no autopsy, as she lived in a different State.

Case 38.—Ten years previous to this writing a young wife was treated for consumption; the diagnosis was unmistakable to her attendant physicians and their consultants, who were of the highest repute. She was in bed, pale, thin, wan, coughing hard; hemoptysis. Physical signs of cavities in both lungs; the morphology of the blood was not tuberculous, but it contained oil, and in the white blood-corpuscles were fat globules. The urine when examined revealed abundant fatty epithelia, casts, and two-thirds albuminous! The fatty degeneration was entirely unsuspected till proved to exist by me. The treatment availed but little, as she was too far gone to carry it out.

Case 39.—Miss ——, 40 years old, complained of hebetude and listlessness, inability of exertion, depression of spirits, averring that she never had been better and never would be; had good medical attendance. It was only by persistent urging on the part of a friend that she would see me at all. She was a very quiet little body. Extremities and surface generally cold. There was hyperæsthesia of vagina and uterus, which seemed fully to account for the symptoms, but when these were relieved the hebetude continued, and she would have given up treatment as useless but for the persistence of her friends. The blood was then carefully studied with the urine, and the stigmata of fatty degeneration discovered; quantity small but positive. An effort was made to remove the ab-

normal signs, and success followed after some months by cure of the hebetude, which has lasted more than three years.

Case 40.—Mr. ——, about 33 years old, was a fine healthy boy up to the age of six, when he almost died from measles; his mother affirms that he never was the same person afterwards, and his mental and intellectual faculties were stunted. He was more or less continually ailing; at one time had consumption, which was cured by systemic treatment; also enlarged tonsils, which were cured by surgery. About four years ago he had a difficulty of locomotion. It gradually increased until he could not walk unless supported by an assistant, or by holding to a rail in going down or up stairs. The nude trunk standing was a torso. The right arm hung down so that the hand almost touched the floor. There was a symmetrical muscular atrophy of the body and limbs, and he suffered great pain in both. His blood showed oil, and fat in leucocytes; urine revealed albumen, casts, fatty epithelia, protoplasmic filamentous catarrh,—these stigmata were not all present at one time but appeared separately, dually, or triply, after treatment began. Several other physicians saw this case away from me, especially when he sojourned at the seashore, and all diagnosed incurable locomotor ataxia. One seeing him later, locomoting normally, said to him, "I don't believe you are cured, and won't believe it!" He was treated on the plans here given, and humanly speaking, without he would have died.

As to his chirography (1896) it must be confessed that it is locomotor ataxic. The stigmata of fatty degeneration are absent, and his locomotion is normal; even the pains have gone. If my readers will not receive this history as to therapy, still it serves to evidence the masquerade and also that there is a prelocomotor ataxic state.

Case 41.—A recently retired business man, aged 74, complained of hearing his heart beat so loudly at night as to wake him and keep him from sleeping. The cardiac area of dulness on percussion was enlarged; there was a slight souffle with the first sound; the sounds were somewhat muffled and distant. His urine contained albumen, casts true and false, fatty epithelia, amyloid bodies occasionally; his blood oil, and fat in the white blood-corpuscles. It was quite difficult to persuade this man that he was ill—he had that confidence in his own knowledge and judgment common to patients with urinary catarrh. He came in to see me on the day of his death, and appeared quite well, though he presented the above stigmata, besides the urine was much loaded with bile and filamentous catarrh. He then decided to go on regular treatment. Being busy I did not make out his written directions, and he consented I should send them later; but before I had time to write them out I heard that he was dead. It appears that, in about two or three hours after leaving me, he walked by a banker's office on level ground in State street, Boston, bowed a recognition to a clerk at the window, immediately staggered, and would have fallen had not a passer-by caught him. At once the clerk ran out and found him dead. It was called "heart failure." This was true, but what made the heart fail? By the above evidence it was fatty degeneration. It may be averred that there should be post-mortem evidence. It would have been well, but such an examination was not made, one reason being that I had returned to my home in New York.

"Heart failure" as a cause of death should always be qualified by naming the exciting cause. If the heart fails because of a bullet or sword piercing it, it would be so stated in

military history. Then why not in medical ethics? In the early part of the eighteenth century the "medics" did this better than now, for they *gave the causes!*

The clinical lesson of Case 41 is that patients do not always appreciate the situation, and that physicians also do not always appreciate the situation. With hindsight it seems to me that I ought to have made more of the opportunity. He thought he appreciated the situation; so did I. When I wished several samples of his morning urine, he wrote he did not know why I wished them, as there had never been anything the matter therewith, and this after I had told him that previous examinations had shown the above abnormalities. Could we have foreseen the future for a single day we both would have been more anxious and more careful.

This case also teaches that physicians should communicate as far as possible the serious nature of such cases, and that, if one believes, he must make his patients also believe. Conventionalism conceals too much the fact of heart disease, because conventionalism believes it incurable. After what has been produced here in evidence, is it not the better way to signify with tact that the case is serious, but not incurable if the patient faithfully follows out directions? Once a lady came to me for examination as to heart disease. I found it. I told her. She was so indignant that she never came back.

Case 42.—A man, aged 45, came under my care some two years ago because of extreme sensitiveness and pain in the abdominal cavity, and because of frequent diarrhœas. His occupation was that of a street-car conductor. He was well-born and well-bred, but had suffered reverses in finances and also from family troubles; bachelor; had served in the navy and marine service and had been in tropical countries a good many years.

Examination of the blood showed free subdermal oil, fat in the white corpuscles, some ropiness and stickiness of the red corpuscles, with some crystals of pigment matters, and later on in his case cystine was found.

The morphology and chemistry of the urine showed but little abnormality.

It was some months later that I learned that he suffered from hemorrhages under the skin, which he recognized as black-and-blue spots; and also in cold weather, on hitting the hand, the slightest bruise would result in a running, open wound which it would take weeks to heal. This case has been under observation ever since. His general condition is vastly improved; the hemorrhagic condition of the skin has entirely disappeared. There has been an appreciable gain in weight and the diarrhœas are much less frequent.

This case is unquestionably one of fatty degeneration of the nervous system, as well as in the blood vessels.

J. A. Cutter.

Case 43.—Some three years ago a man, middle-aged, married, German by birth, a mechanic by occupation, consulted me for a hemorrhagic condition of the skin which he had suffered with for over ten years.

At the time of my examination, from above the knees to nearly the ankles the color varied from red, blue, to black. He had worn rubber bandages and had been under much care for rheumatism. The morphology of the blood showed but little rheumatism, but, instead, the free subdermal oil and fat in the white blood corpuscles. The urine occasionally contained albumen, though I did not at any time find casts or fatty epithelia. He suffered, like the preceding case, from borborygmi, also from frequent and almost appalling diarrhœas. The extraction of a tooth would result in a hemorrhage lasting from twelve to twenty-four hours, necessitating the care of a surgeon. The diagnosis was made of hæmatophilia. He was treated by systemic plans, eating almost wholly broiled beef preparations. His skin hemorrhages ceased after about six months' treatment. He is now working as a mechanic. A tooth extracted about a year ago resulted only in the ordinary hemorrhage after such an operation.

J. A. Cutter.

December, 1897, fell 45 feet in a building, landing supine; no bones broken. Now apparently well.

Case 44.—Some two years ago a widow, aged 40, consulted me for tic douloureux, from which she had suffered intermittently for three years. The spasms of pain occurred on the right side of the face, occasionally going slightly to the left; the mouth would be drawn to one side, and during the exacerbations of pain the right side of the face would, so to speak, sweat fat.

She had buried her husband some five

years previously, after a long illness of consumption. Her friends had complained of her as being listless and lazy for a number of years, yet she met her duties nobly.

The blood showed free subdermal oil, fat in the white blood corpuscles, with slight tendency to rheumatism, as shown by a small increase in the fibrin filaments, some huddling of the red blood corpuscles, and some salts present in crystalline form. The heart was somewhat enlarged and weakened, the urine bilious, with more or less of albumen. A diagnosis was made of systemic fatty degeneration.

She did her own work, her two daughters of 14 and 12 being at school. Treatment systemically adopted, and she lived as closely as she could upon broiled beef with but little vegetable food. Local treatment was followed for a symmetrical enlargement of the womb; but little medicine given her, as strychnine upset her, and anodynes of various kinds, like codeia, cannabis indica, clogged her liver and brought back albumen into the urine. These anodynes did not control pain, but only made it worse because of this clogging; of this matter more later.

The medicines which agreed the best were digitalis and the pyrophosphate of iron.

She improved in the course of eighteen months, although her treatment was under great disadvantage, and she was not often seen, as she lived fifty miles from New York. In the spring of 1897, March, she had a ferocious attack of tic douloureux, from which she and I both thought she had recovered. This pain followed her up so long that I finally made her take an anodyne in the following shape:

One of Fraser's tablets, containing $\frac{1}{4}$ of a grain of morphine, $\frac{1}{200}$ of a grain of atropia, and $\frac{1}{200}$ of a grain of hyoscine hydrobromate, placed in a glass three-quarters full of water. She was instructed to take teaspoonful doses every minute until relieved. These small doses after a time relieved her, and she then followed up the medicine with salts to act on the liver.

It seems that she had been overworking, lifting, and straining.

She now suffered from difficult vision in the left eye—that is, the eye opposite to the facial neuralgia. Examined some weeks later by ———. He informed me that there was detachment of the retina, and feared there was a tumor of the choroid. She was examined again by this same gentleman in August, and by ———, of New York, and they both were positive that there was a tumor present and that it was probably a sarcoma, and immediate operation was advised.

Consulting with my father, Dr. Ephraim Cutter, it was thought best to wait awhile to see if the condition of the eye would improve, for we both believed that this was simply an evidence of fatty degeneration.

In October I saw her, with Dr. ——, and we found that the growth was increasing; no pain or discomfort in the eye, but the evidence was positive that the eyesight was forever ruined. It was decided to enucleate the eye, which was done, under ether, November, 1897.

A careful microscopical examination of a portion of the tumor by my father and myself showed it to contain absolutely no heterologous elements, and therefore negatived a diagnosis of cancer in any of its

forms. Instead, the growth was made up of low-grade tissue, almost altogether fat. So this woman was again suffering from fatty degeneration.

Good had been done by the moral effect of the demonstration that there was no cancer about her eye. She may now go on and have better times and finally recover from her enemy which has been pursuing her for so many years—in fact, from girlhood, if I judge rightly her history.

Partial Bibliography.*

EPHRAIM CUTTER, M.D., LL.D.,

Corresponding Member Belgian and Italian Microscopical Societies and Gynæcological Society of Boston; Member Massachusetts Medical Society, American Medical Association, etc., etc.

The Pre-Apoplectic State. New York State Medical Reporter, June, 1896.

Preventive Medicine in Apoplexy. Journal American Medical Association, 1896.

Feeding against the Appetite. Medical Register, Philadelphia, Pa., April 2d and 9th, 1897.

Trophopathy in Fatty and Fibroid Degenerations. Jointly with John A. Cutter, M.D. Virginia Medical Monthly, January, 1890; Southern Practitioner, February, 1890; Medical Bulletin, January, 1890; N. E. Medical Monthly, February, 1890; Journal Am. Med. Association, February, 1890; Dietetic Gazette, December, 1889; The Doctor, September, 1889; London Lancet, vol. i., 1890.

Feeding in the Wasting Diseases. Joint report to Committee of Dietetics of Am. Med. Association, 1890, with Dr. John A. Cutter. Journal of Am. Med. Association, July 26th, 1890; Med. Bulletin, June, July, and August, 1890; N. E. Med. Monthly. August, 1890; Pac. Med. Journal, August, 1890; Southern Practitioner, July and August, 1890; Virginia Med. Monthly, June and July, 1890. On (1) Consumption, one hundred cases; (2) Bright's Disease, Fibroid Tumor, and Cancer; (3) Male Neurasthenia.

A New Sign of the Pre-Embolic State. Chicago Med. Journal, February, 1879.

Food as an Æsthetic, Chemic, Physiologic, Pathologic, and Therapeutic. Am. Journal of Dental Science, January and February, 1880.

Partial Syllabic Lists of the Clinical Morphologies of Blood, Sputum, Fæces, Urine, Foods, Clothing, Soils, etc. Book. Published by Author, 1888.

The Esoteric Beauty and Utility of the Microscope. Journal of the Amer. Med. Ass'n, May 7th, 1892.

---

* Titles of contributions to diseases of women, diseases of the throat, galvanism, etc., though collaterally connected with subject, are not here listed.

The Therapeutical Drinking of Hot Water: its Origin and Use. Am. Med. Weekly, January 8th, 1883; Druggists' Circular, August, 1883; London Lancet, September 15th, 1883; Journal d'Hygiène, October 25th, 1883; Therapeutic Gazette, Scientific American, Constitutionnelle, and the medical and secular press of Paris.

The Pre-Rheumatic and Pre-Embolic States. The Medical Bulletin, Philadelphia, April, 1897.

Cystine. The Medical Bulletin, June, 1896.

The Fatty and Fibroid Degenerations. Jointly with John A. Cutter, M.D. The Journal of the American Medical Association, 1892.

Fatty Degeneration and its Masquerades. The Medical Age, Detroit, October 10th, 1895.

Medical Food Ethics Now and to Come. Secretary's Address, Section Physiology and Dietetics, Am. Med. Ass'n, 1892. The Journal of Assoc., 1893.

Food, Nervousness, and Divorce. Therapeutic Gazette, August, 1880.

Food as a Medicine in Uterine Fibroids. American Journal of Obstetrics, October, 1877.

Food and Uterine Fibroids. International Med. Congress, Berlin, 1890.

Diet in Cancer. Albany Med. Annals, July-August, 1887.

Treatment of Consumption by Animal Food. Boston Journal of Chemistry, January, 1876.

Treatment of Consumption. Transactions Am. Med Ass'n, 1880, pp. 76. Seventy cases reported.

Food. An open letter to J. Marion Sims, M.D., LL.D. Gaillard's Med. Journal, New York, February, 1881.

Food and Tubercle. International Med. Congress, Berlin, 1890.

Count Rumford as Cook. Woburn Journal, May 30th, 1890.

Food as a Medicine in Typhoid Fever and in Laryngeal Growth. Middlesex S. Dis. Med. Society, Massachusetts, May, 1877.

Food in Nervous Affections. Journal of Am. Med. Association, 1888.

Food in Motherhood. Book. D. Stott, 370 Oxford street, London, January, 1890. Out of print.

Heart Disease and Feeding. Open letter to W. T. Gardner, M.D., LL.D., Glasgow. Albany Medical Annals, September, 1888.

Vinegar and Vinegar Yeast. Times and Register, Philadelphia, July, 1889.

Diet List for Lactation. Michigan Med. News, August, 1880.

Feeding of Nursing Children. Virginia Med. Monthly, August, 1880.

Food in Agalaxia. American Journal of Obstetrics, New York, April, 1878.

Candy. Boston Journal of Chemistry, April, 1876.

Diseased Teeth. Youth's Companion, Boston, December, 1886.

Teeth and Flour. American Journal of Dental Science, November, 1878.

Is Flour our Proper Food? Trans. New Hampshire State Med. Society, 1875; The Doctor, New York, January and February, 1890.

Does the Use of Flour Promote the Decay of Teeth? Boston Journal of Chemistry, December, 1874.

Does the Use of Flour Promote Affections of the Nervous System? Boston Journal of Chemistry, February, 1875.

Asthenic Disease and Flour. Boston Journal of Chemistry, April, 1873.

Examination of Flour. Boston Sunday Herald, December 5th, 1880.

Whole Wheat Cleaned. Popular Science News, Boston, January–February, 1888; Home Missionary; S. Sc., London, June, 1888.

Sugar. Annals of Hygiene, Philadelphia, April, 1888.

Butter. Michigan Med. News, June 25th, 1881.

List of Food Stuffs under the Microscope. Cincinnati Medical News, March, 1881.

Highly Important and Extensively Advertised Cereal Foods under the Microscope. Twenty-eight cuts. Am. Med. Weekly, January 7th, 1882, edition 260,000; Scientific American; also newspapers.

Flour. Gaillard's Med. Journal, 1882.

Tubercle Parasite. Am. Med. Weekly, May, 1882; Christian Advocate, June 1st, 1882.

A New Clinical Microscope. Boston Journal of Chemistry, April, 1869.

Amœboid Movements of the White Blood Corpuscle. Boston Journal of Chemistry, June, 1876.

Tolles' One-Seventy-fifth Inch Objective: its History, Uses, and Construction. Am. Journal of Arts and Sciences, New Haven, August, 1879; Scientific Am. Supplement. Translated into French and published in Journal de Micrographie, Paris, 1879.

Primer of the Clinical Microscope. Virginia Med. Monthly, August and September, 1879. Pamphlet.

A New Physical Sign of the Pretubercular State. 1877. Illustrated.

Morphology of Syphilitic Blood. Am. Journal of Dental Science, October, 1879. Reprint.

Throat Syphilis and Tubercle according to Salisbury. Archives of Laryngology, New York, December, 1880.

Use of the Microscope in Consumption. Diagnosis of Necrosis and Disintegration. First paper. Journal of Microscopy, Phin's, September, 1881.

Use of Microscope in Consumption. Second paper. Necrosis of Lung. Differential Diagnosis. Am. Journal of Microscopy, Phin's, 1882.

Crypta Syphilitica. Monographia Syphilitica. September, 1888.

On the Morphology of Rheumatic Blood. Philadelphia Med. Times, February, 1889.

Under what Circumstances Do the Usual Signs Furnished by Auscultation and Percussion Prove Fallacious? Boylston gold medal prize essay, 1857.

A New Resting and Invalid Chair. Chicago Med. Journal and Examiner, September, 1877.

The Relations of Medicine and Music. Circular of Information, U. S. Bureau of Education, Washington, D. C., 1886.

The Relation of Medicine and Music. Read to Society of Sc., Letters, and Art, London, November, 1880. Published 1891.

Relations of Music and Medicine. Rewritten. Albany Medical Annals, November, 1888.

Music and Athletics. Journal S. Sc., London, November 20th, 1889.

Food and Music. Dietetic Gazette, January, 1890.

The Voice in Speech, Song, and Whisper. Voice, New York, July, 1890; New York State Music Teachers' Association Transactions, 1890.

Report on Flour and Decayed Teeth. Mass. State Board of Health, 1875.

APPENDICES.

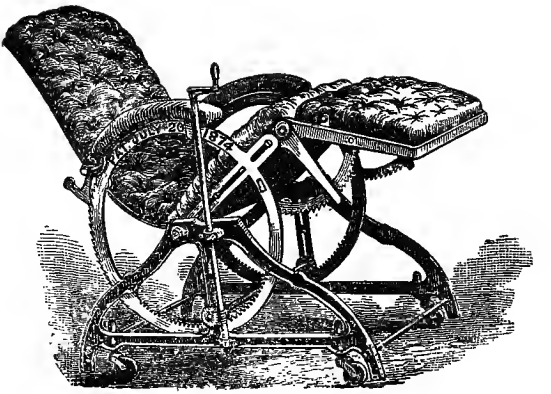
APPENDIX A.

"An Invalid's Chair."

(*Extract from the English Mechanic and World of Science, London, Jan. 7th,* 1876.)

"The New Chair invented by DR. EPHRAIM CUTTER, and represented in the annexed illustration, [p. 182], involves some novel features which are not to be found in similar devices. The back of the chair, the seat, and the leg portion have each an independent motion in vertical planes, corresponding to the motions of the great natural divisions of the human body. The arrangements allow of the variety of changes which are found existing in the human body in a state of perfect rest. Having made the adjustments, the whole series of inclined planes can be made to revolve about a common centre, and the weight of the body can be thrown from one division on to another, or distributed equally over the entire body surface. At the same time the chair allows of the motion of the hip and knee joints. An endless screw gear secures the equable, firm, and certain movement, with no fear of detachment or breakage under ordinary usage. The feet may be easily raised higher than the head, thus allowing the return of the blood from the extremities by reversing the hydrostatic pressure of the column of blood in the veins—a very desirable arrangement in cases of cardiac disease."

See pages 112, 113, 114.



APPENDIX B.

Varieties of Sugar.

g = glucose group. s = saccharose group.

Name and Group.	*Origin.*
arabinose, g	Gum arabic
dambose, g	Dambonie
dextrose, g	Vegetables, honey, etc.
eucalyn, g	Melitose
galactose, g	Milk-sugar
inosite, g	Flesh, etc.
lactose, s	Milk
levulose, g	Fruits, etc.
maltose, s	Malt
meligitose, s	Larch-manna
melitose, s	Australian manna
mycose (ergot sugar)	Fungi, as ergot
saccharose, s	Sugar-cane, beet, etc.
scylite, g	Fish, etc.
sorbin, g	Mountain ash berries
synanthrose, s	Dahlia and other tubers
trehalose, s	Terhala manna

(From Standard Dictionary.)

APPENDIX C.

Doctors' Offices in Business Buildings.

EQUITABLE BUILDING, 120 Broadway,
NEW YORK, *February 1st*, 1896.

To the Editor of the New York Medical Journal:

SIR: Your comment in the current number of the *Journal*, on physicians occupying office buildings, prompts me to write that for over three years my office for consulting has been in the Equitable Building, and that my experience justifies me in commending the action of the Metropolitan Life Insurance Company in preparing to rent to reputable physicians. One of the advantages is that of removing one's work in great part from contact with one's family; women like this especially, as there is an impersonality about a great office building nowhere else obtainable; moreover, the physician obtains quarters in a splendidly fitted building, with surroundings equal to those of many a palace. In the great insurance company buildings, the woodwork alone is of the highest order. It should be saving of money, as one can live in a more modest home, and not as his business increases swell out into larger establishment, such "swelling" being the downfall of many medical men financially.

There is an ethical consideration: the "great" physician with an immense income does not do as good medical work as the man that earns much less, other things being equal as to education and natural ability. The laity think the opposite, and if they find a physician's office crammed full of patients, he is their man. Now, the coming practice of medicine is to be in large part the more careful handling of chronic diseases; such handling takes time, and as soon as the laity realize that a physician will do better work who manages but a few patients, the better it will be for all concerned. The aggregation of doctors in a first-class office building will tend toward this desirable end as placing all on a common level.

Medical men work altogether too long each day, and live altogether too short lives. To go home from the

office and know that a great part of the day's work is done, and that one will not have to labor away into the evening, is a fine thing.

Educate the people to know that, except in case of emergency, which we are always prepared for, the office work is to be done at certain hours in one place, and the doctor will have more rest and time to see his family, bring up his children in the way they should go, and receive the admonitions of his wife.

Other advantages are a fireproof and carefully watched building, and good attendance as to cleaning.

The only objection is the necessity of two addresses. It seems to me that, as the Metropolitan Company are fitting up for a large number of doctors, special arrangements could be made whereby telegrams received after office hours would be forwarded by the superintendent to the homes of the persons addressed.

I wish to say one word as to so-called waste of money in the great insurance company buildings. From my personal observation down-town, I believe that the insurance companies have invested the money of the policy holders most wisely; "the best is the cheapest"; they have used the best as to material, and have not hesitated to get enough light and air. This cannot be said of some buildings put up by rich men for investment; they have scrimped so as to material and space that their investment, I think, does not pay as it otherwise would.

Finally, all hail the time when medical men will not be in contact with patients more than eight hours a day!

JOHN A. CUTTER, M.D.

(From the *New York Medical Journal*, February 22d, 1896.)

INDEX.

BOOKS, PAMPHLETS.

A. THE FATTY ILLS AND THEIR MASQUERADES. Cloth. Pp. xiv–194. Price, $1.00.

B. THE CLINICAL MORPHOLOGIES of the Blood, Sputum, Fæces, Urine, Skin, Vomitus, Foods (including Potable Waters, Ice, and the Air), the Clothing, Uterine and Vaginal Discharges, and Soils; with list of lantern slides. $1.00.

C. THE GALVANIC TREATMENT OF UTERINE FIBROIDS. Cloth, $1.00.

D. DIET IN TUMOR AND CANCER. 25 cents.

E. THE GALVANO-CAUTERY: ITS USE IN THE REMOVAL OF PILES AND GROWTHS. 10 cents.

F. CONTRIBUTIONS TO LARYNGOLOGY: Thyrotomy modified: Fibroid Enlargements of Arytenoid Cartilages: A new name for the Ventricular Bands. 10 cents.

G. THE BEST WATERS TO DRINK. 10 cents.

H. (1) THE PRE-APOPLECTIC STATE. (2) THE PRE-RHEUMATIC STATE. (3) THE PRE-EMBOLIC STATE. (4) CAUSES OF HEART DISEASE. (5) FOOD AND TUBERCLE. (6) PRETUBERCULOSIS. (7) ASTHMA. 25 cents.

I. (1) CUTTER'S STEM PESSARY. (2) ELECTROLYSIS OF MYOMA. (3) FOOD AS A MEDICINE IN UTERINE FIBROIDS. Gynic Papers, Berlin Medical Congress, 1890. (4) CLEANED WHOLE WHEAT. (5) WHAT MADE THE CURES? (6) UTERINE DISEASE SOMETIMES MISTAKEN FOR CONSUMPTION. Price, 25 cents.

J. FOOD IN MOTHERHOOD. Out of print. Expect to publish, 1898. Price, $1.00.

K. CUTTERS' MEDICAL MEMOIRS. In Preparation. Subscription Price, $5.00.

Address

Ephraim Cutter, M.D., John A. Cutter, M.D.,

EQUITABLE BUILDING, 120 Broadway,

NEW YORK.

CUTTERS' SCHOOL OF MICROLOGY.

For Physicians only. First taught in 1869.

Principal: EPHRAIM CUTTER, LL.D.,
M.D. Harv. 1856, Univ. Penna. 1857.
Assistant: JOHN ASHBURTON CUTTER, B.Sc.,
M.D. Albany, 1886.

Lessons, one hour each. Terms, $200.00, in advance, for course.

EQUITABLE BUILDING, 120 Broadway, NEW YORK.

SYLLABUS OF LESSONS IN CLINICAL MORPHOLOGY.

I. POTABLE WATERS. Mode of collecting. ALGÆ, such as Diatoms, Desmids, Zygnemaceæ, Œdogoniums, Oscillatoriaceæ, Protococcaceæ, Palmellaceæ. II. FUNGI, Yeast, Alcoholic and Vinegar; Bacteriaceæ, Vibriones, Leptothrix. PROTOPLASMS, Amœbæ, Infusoria, Rhizopods, Asthmatos Ciliaris. III. FOODS. Bread, Crackers, Infants' and Invalids' Foods, Changes in Food by Cooking. IV. DIRT, AIR. V. URINE. VI. FÆCES. VII. SPUTUM, VOMITUS. VIII. HEALTHY BLOOD. IX. CLINICAL MORPHOLOGY OF SKIN. X. TUBERCULOSIS. THE PRE-TUBERCULAR STATE—Blood, Sputum, Fæces, Urine, Skin. XI. SYPHILIS. The Blood and Urine. XII. RHEUMATISM. THE PRE-RHEUMATIC STATE—Blood and Urine. XIII. ASTHMA, HAY FEVER, LA GRIPPE—The Sputum. XIV. THROMBOSIS AND EMBOLISM. THE PRE-EMBOLIC STATE—The Blood. XV. AND XVI. THE FATTY AND FIBROID DEGENERATIONS AND THEIR MASQUERADES. Bright's Disease, Diabetes, Enlarged Liver, Stomach and Heart, Atheroma, Apoplexy, Paralysis, Locomotor Ataxia, Cataract. THE PRE-APOPLECTIC STATE—The Blood, Sputum, Urine, Fæces, and Skin. XVII. MALARIA. Blood, Urine, Skin, and Sputum. XVIII. MALE NEURASTHENIA. The Urine. XIX. CONSUMPTION OF THE BOWELS. XX. REVIEW. Special reference to diagnosis of diseases mistaken for others. Uterine Disease for Consumption. Male Neurasthenia for Consumption and Rheumatism. Heart Diseases for Consumption. Fatty and Fibroid Degenerations for Consumption, Rheumatism, etc.

The Physician is taught how to use his microscope daily. He becomes his own teacher at the end of the course. The diseases noted are usually covered. The detection of the predisposing states of tuberculosis, rheumatism, thrombosis, apoplexy, Bright's, heart diseases (to name no more), and the removal of their causes; and the diagnosis of the diseased conditions, with the positive management of such that a certain percentage are permanently ameliorated, are amongst the duties of the physician.

Cutters' Medical Memoirs

TO CONTAIN:

I. The Technique of the Microscope.

II. The Germ Diseases.

III. The Fatty Ills.

IV. The Fibroid Ills.

V. The Gravel Ills.

VI. The Ills Due to Fibræmia and Allied Conditions.

VII. The Cancerous or Malignant Ills.

VIII. Food in Motherhood.

IX. Diseases of Women, Specially in the Line of Work Established by the Senior Writer in 1868 as to Management of Uterine Displacements.

X. Ethics and Polemics of Medical Practice, Specially as to the Management of Chronic Disease.

XI. Music, Galvanism, etc.

It is hoped to issue the above during 1898. The writing will be on the line of practical work in medicine as to diagnosis and management of disease.

SUBSCRIPTION PRICE, $5.00.

EPHRAIM CUTTER, M.D.,
JOHN ASHBURTON CUTTER, M.D.,

120 Broadway, Equitable Building, New York.